NORA
AN ASSOCIATION OF RESPONSIBLE RECYCLERS

May 15, 2017

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Office of Policy
United States Environmental Protection Agency
1200 Pennsylvania Avenue, NW
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Via Electronic Submission on Regulations.gov
RE: Comments on Evaluation of Existing Regulations, 82 Fed. Reg. 17793 (Apr. 13, 2017), EPA-HQ-OA- 2017-0190: The TSCA regulation known as the "anti-dilution rule", 40 CFR 761.1(b)(5), should be replaced or modified[1].

Introduction
NORA, An Association of Responsible Recyclers (NORA), appreciates this opportunity to submit comments on the need to replace or modify the TSCA regulation known as the "anti-dilution rule", 40 CFR 761.1(b)(5), a regulation that is:

- Inhibiting job creation and threatening existing jobs;
- Outdated and ineffective;
- Imposing costs that far exceed benefits; and
- Interfering with the responsible recycling and reuse of used oil.

NORA represents more than 380 private, for-profit companies located primarily in the United States. The vast majority of NORA members are small, family-owned or privately-held businesses that provide recycling services and/or recycling-related products. Our members operate all across the country and provide employment for over 150,000 Americans. The average NORA member collects about 10 million gallons of used oil and related materials, such as oil filters and spent antifreeze, each year.

Used oil recyclers collect, process and market nearly one billion gallons of used oil and related materials each year. Every day, NORA members run collection routes to ensure that used oil is responsibly collected, transported and recycled.

Unfortunately, TSCA's PCB regulations are interfering with the responsible recycling and reuse of used oil. This is a problem because:

• Improperly disposed of used oil from one automobile oil change can contaminate one million gallons of fresh water — a year's supply for 50 people.

[1] The rule provides that "[n]o person may avoid any provision specifying a PCB concentration by diluting the PCBs, unless otherwise specifically provided."

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• Used motor oil can be re-refined into new oil, processed into fuel oil, or used as raw material for the petroleum industry.

• One gallon of used oil processed for fuel contains about 140,000 British Thermal Units (BTUs) of energy.

• Recycling just 2 gallons of used oil can generate enough electricity to run the average household for almost 24 hours.

• If all the used oil from American do-it-yourself oil changers were re-refined, it would be enough motor oil for more than 50 million cars a year.

• Re-refining used oil takes only about one-third the energy of refining crude oil to lubricant quality.

• It takes 42 gallons of crude oil, but only 1 gallon of used oil, to produce 2.5 quarts of new, high-quality lubricating oil.

• Recycling used oil keeps it from polluting soil and water, conserves a valuable resource and lessens our dependence on unstable or hostile governments.

Background information to help frame the issue

More than 1.5 billion pounds of PCBs were manufactured in the U.S. before EPA banned their production in 1978. When production was terminated, it was assumed that PCBs would be properly disposed of over a period of time and, in effect, "flushed out of the system." Unfortunately, almost 40 years later many PCB-containing materials are still in use and, as older electrical and hydraulic equipment is being destroyed or dismantled, the oil containing PCBs is being improperly disposed of (whether deliberately or unintentionally).

The U.S. generates about 1.3 billion gallons of used oil annually and PCBs are being discovered in the used oil with an increasing and alarming frequency. Despite the best efforts of used oil recyclers to avoid it, PCB contamination does occur on a regular basis. DIY collection centers, small auto shops, scrap yards and equipment service shops are among the many sources of PCB contamination. One person involved in the PCB testing business has characterized the situation as "a PCB epidemic."

In an effort to reduce the number and scope of PCB contamination incidents, several large, sophisticated recyclers have implemented new best management practices (BMPs). These practices go far beyond current regulatory requirements and they are expensive. They include quality controlled sampling and testing, annual employee training and the continuous use of guard tanks. The used oil collection/recycling industry, however, includes hundreds of small and medium sized businesses that are not implementing these management practices. As noted in the attached Coles Report, roughly 60 to 65 percent of the industry is *not* implementing BMPs and is unlikely to do so unless the anti-dilution rule is replaced or modified.

The Regulatory Problem

EPA's anti-dilution rule may be an effective deterrent against *intentional* dilution of PCBs by responsible actors. However, when applied to *unintentional* dilution of PCBs it is not an effective deterrent and results in punitive and costly "remedial" measures as well as the unnecessary and wasteful destruction of usable and valuable oil.

Over the past few years, used oil recyclers who are (i) complying with EPA's Standards for Management of Used Oil (40 CFR Part 279), (ii) using voluntary BMP compliance programs that go beyond what is required, and (iii) self-disclosing incidents of PCB contamination to EPA, have been forced to destroy the oil in a TSCA incinerator – an expensive and wasteful activity that prevents recycling and reuse of the oil – even when PCB concentrations are below 50 ppm. But for the anti-dilution rule, oil with such low levels of PCBs can be lawfully re-refined in hydro-treatment facilities or burned for energy recovery in industrial furnaces, kilns or boilers.[2]

EPA's strict application of the anti-dilution rule is:

i) Forcing recyclers, including those who are voluntarily implementing costly safeguards that go beyond regulatory requirements, to send used oil contaminated with relatively low concentrations of PCBs to costly and wasteful incineration instead of environmentally protective and beneficial recycling and reuse;

ii) Discouraging the adoption of voluntary safeguards by used oil transporters, collectors and recyclers who see no benefit to changing their behavior and incurring additional costs;

iii) Causing numerous commercial and municipal operators of DIY collection sites to consider shutting down; and

iv) Resulting in the "disappearance" and illegal disposal of PCB contaminated used oil.

The Solution

Replace or modify the anti-dilution rule to (a) limit its application to intentional dilution, or (b) create a conditional exception for used oil recyclers who meet certain conditions and comply with "best management practices" that go beyond the requirements of current law to prevent PCB contamination of used oil. The exception should allow qualified used oil recyclers to manage PCB-contaminated used oil in its "as found" concentration. The "as found" approach is similar to EPA's regulatory exception for remediation waste (see 40 CFR 761.61).

Risks of no action

Unless EPA changes its approach to the management of PCBs found in used oil, we are likely to see:

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[2] But for the anti-dilution rule, oil containing between 50 and 499 ppm of PCBs can be lawfully re-refined or burned for energy recovery in high efficiency boilers as provided in 40 CFR 761.60(a) and 761.71.

- Continued unnecessary and wasteful incineration of used oil that could be recycled and reused in an environmentally protective and beneficial manner;
- A significant amount of illegal disposal (industry experts estimate that more than 2 million gallons of PCB contaminated used oil are slipping through the system each year);
- Many small and medium sized recycling companies who have PCB contamination incidents will be unable to bear the cost of PCB incineration and clean up and, as a result, will file for bankruptcy and leave their facilities to be designated as Superfund PCB sites; and
- A reduction in the number of DIY collections sites.

Benefits of action

If EPA provides for increased, less costly management options for PCB contaminated used oil by recyclers who implement "best management practices", we are likely to see:

- An increase in the amount of used oil being recycled in an environmentally protective and beneficial manner;
- A reduction in illegal disposal;
- An increase in the use of "best management practices" by the used oil recycling industry;
- No reduction in the number of DIY collection sites; and
- No increase in the number of Superfund PCB sites.

Conclusion

On behalf of NORA members, we commend EPA for initiating this review of existing regulations and appreciate the opportunity to provide these comments. We look forward to working with you to correct the problems outlined above.

Sincerely,

Scott D Parker

Scott Parker

Report to the U.S. Environmental Protection Agency

PCB Infiltration into the Used Oil Recycling System: Causes, Costs, and Corrective Actions

prepared on behalf of

NORA, An Association of Responsible Recyclers

6 April 2016

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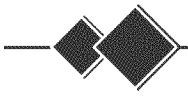

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PCB Infiltration into the Used Oil Recycling System: Causes, Costs, and Corrective Actions

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1.0 Introduction

In early 2013, NORA, an Association of Responsible Recyclers ("NORA")[1] approached EPA to begin a discussion about how TSCA's PCB regulations are interfering with responsible recycling of used oil. Following several months of productive dialogue, in April 2014 NORA submitted to EPA a draft approval to manage, treat or dispose of PCB-contaminated used oil. The draft approval included several conditions, including implementation of specified Best Management Practices. After several more months of additional, productive dialogue, in November 2015 EPA staff presented NORA with a series of questions seeking data on three main topics: (1) What is happening today/What is the status quo?; (2) What environmental changes/benefits would EPA approval of NORA's proposal produce?; and (3) What economic changes/benefits would EPA approval of NORA's proposal produce?

My firm, Coles Environmental Consulting, Inc., was requested by NORA to prepare a report providing information on PCB contamination of used oil in response to the questions posed by EPA staff and to offer my thoughts, where appropriate, or any conclusions that may be drawn from that information.

It should be emphasized that PCB contamination of used oil is not a subject that has been previously studied or documented. There is no "file" on this subject in libraries or in EPA's website. Indeed, I know from my professional work that a typical oil recycler, having experienced a PCB contamination incident, will not want to broadcast that news to the outside world. A PCB incident can adversely affect an oil recycler's business relationships with his or her customers, particularly if a competitor makes an effort to "spread the word."

It is my understanding that the subject of PCB contamination of used oil as a significant problem for the industry came to light about six years ago when NORA members at a conference in Alexandria, Virginia candidly exchanged information on their experiences with PCB incidents. It soon became obvious that these oil recyclers shared the same nightmare. While NORA searched for some kind of solution, many reports of

[1]NORA is a trade association, founded in 1984, that was formerly known as the National Oil Recyclers Association. Today its members collect and recycle used oil, spent antifreeze, oil filters, parts washing chemicals, and oily wastewater throughout the United States and Canada.

new PCB incidents kept surfacing. Although it may have seemed as though this was a contagious epidemic, my own view is that the more testing that is conducted on used oil, the greater the likelihood that PCBs will be found.

To gather information on PCB incidents and management practices in the oil recycling industry, interviews were conducted with 25 oil recyclers. These companies reported a total of 132 PCB contamination incidents. To gain a broader picture of the oil recycling industry's PCB experience, more companies should have been interviewed -- but many declined despite assurances that the identity of the company would never be disclosed. The same questions were asked of each company and the questionnaire was sent to the company in advance so that if research were needed, the answers would be provided with greater specificity. See Attachment A (survey questions). There was no attempt (or reason) to influence the answers. A compilation of the information gathered from the interviews is set forth in the Attachment B (titled Results from Interviews of 25 Used Oil Companies Concerning PCB Contamination Incidents).

In preparing this report, I have reviewed all of the written materials that NORA has submitted to EPA including NORA's proposal to adjust the TSCA regulations' anti-dilution rule[2] for PCB-contaminated used oil ("NORA's proposal") as well as a related document referred to as NORA's Best Management Practices ("BMPs", see Attachment C.) Briefly stated, NORA's proposal would allow PCB-contaminated used oil to be managed in its "as found" concentration provided the oil recycler has implemented the BMPs. In effect, with some exceptions, used oil found to be contaminated notwithstanding implementation of BMPs would be managed in the same manner as "remediation waste."

In addition, I have conferred with NORA's General Counsel who has provided me with useful information. Finally, I have drawn on several decades of experience working in and dealing with analytical laboratories as well as consulting with numerous oil recyclers on environmental compliance issues. See Attachment D. Having worked with numerous oil recyclers on a wide range of environmental projects over the past 25 years,

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[2]The rule provides that "[n]o person may avoid any provision specifying a PCB concentration by diluting the PCBs unless otherwise specifically provided." 40 CFR 761.1(b)(5). In the present context this means that even where the dilution was unintentional, the PCB-contaminated used oil must be managed according to its original concentration (assuming that can be ascertained) rather than in its "as found" concentration.

such as preparation of SPCC plans, I believe I am well acquainted with the oil recycling industry in general and certain problems in particular, including PCB contamination of used oil.

2.0 Executive Summary

2.1 Scope and Cost of PCB Contamination

- PCBs have been ubiquitous in the United States for many decades. The widespread assumption that PCBs would be "flushed out of the system" within a decade or so after the manufacturing of PCBs was prohibited has turned out to be wildly over-optimistic.

- Regardless of whether the unlawful disposal of PCB-contaminated used oil is deliberate or unintentional, the practical effect is that PCBs are an ongoing and highly vexing problem for the entire used oil recycling system. These oils have infiltrated the used oil recycling system for many years, and continue to do so.

- An oil recycling facility that has become contaminated with PCBs faces numerous problems that require difficult, time consuming and expensive solutions. Typically the facility's operations must be suspended while cleanup plans are developed and approved.

- The cost of a PCB-contamination "incident" will vary and depend on a number of factors such as the quantity of contaminated used oil and whether the contamination spread to the recycling facility's tanks and equipment – and possibly used oil customers. NORA's survey revealed that the cost of responding to a PCB incident ranged from a low of $39,000 to a high of $15 million. The average cost for the survey respondents' largest PCB incident was $1.98 million.

- An oil recycler confronting a PCB contamination incident has very limited options in the management of the contaminated used oil. Under NORA's proposal, the cost of addressing a used oil/PCB incident would be significantly reduced in most cases -- but certainly not eliminated. An oil recycler's remediation costs under the current TSCA regulations are likely to be 3 to 5 times the costs under NORA's proposal. These remediation costs are in addition to the

oil recycler's expenses to implement NORA's Best Management Practices. Under NORA's proposal these costs may be manageable; under EPA's current rules, especially in today's devastating energy market, the oil recycler's costs would be catastrophic.

2.2 Lack of Enforcement against Generators

- One disturbing finding of the survey of oil recyclers is that for the respondents who had experienced a PCB incident (and there were 132 such incidents) only one of the generators responsible for the PCB contamination was the subject of an enforcement action by EPA. Surprisingly, although EPA has a robust enforcement program for TSCA violations involving PCBs, generators of PCB contaminated used oil picked up by used oil transporters have not been targeted by EPA. A thorough search of EPA TSCA enforcement actions relating to used oil incidents reveals that only one used oil generator has been the subject of an enforcement action.

- EPA's failure to initiate enforcement actions against generators of PCB-contaminated used oil sends a contradictory message to the regulated community. Specifically, generators who have the obligation to determine if their used oil contains PCBs avoid any accountability for their violations while transporters and recyclers who rely on generator certifications pay heavy fines and cleanup costs. The lack of enforcement against PCB/used oil generators precludes any deterrent effect and, in turn, undermines the incentive for generators to determine if their used oil contains PCBs.

2.3 Impact on DIY Programs

- Congress, EPA, as well as state and local governments have long supported a robust system of DIY used oil collection. Significantly, all but three of the oil recyclers interviewed for the survey stated that they considered DIY oil collection centers to be "high risk" for PCB contamination. Two of the three were unsure.

- Several oil recyclers have reported PCB contamination incidents where the source of the PCBs was determined to be a DIY facility. This is a troubling finding

because to the extent that the oil recycling industry refuses to collect DIY used oil, such oil may be improperly disposed of.

2.4 Benefits of NORA's Best Management Practices

- Implementing NORA's Best Management Practices can greatly reduce the potential for PCB contamination of the processing plant and the recycled used oil. Implementation of the BMPs will result in significantly reduced environmental contamination as well as lower cleanup and decontamination expenses. Best management practices are not required by current regulations but need to be widely implemented.

- Over the past four years NORA has been engaged in a comprehensive effort to understand the nature of the PCB contamination problem and develop strategies to address it. The key elements of this effort are: education, testing, isolation, and environmentally sound management.

2.4.1 Testing

- NORA members have learned that, despite claims to the contrary, testing with Clor-D-Tect kits is not a reliable method for detecting PCBs in used oil. The major lessons of NORA's educational effort is that (1) PCB-contaminated used oil can come from many different types of generators; and (2) there is no substitute for analytical laboratory testing for PCBs.

- Analytical laboratory testing for PCBs in oil is not cheap. A standard PCB test (EPA Method 8082A) by an accredited laboratory for one sample will cost approximately $85 or more. A "rush" test (i.e., results within 24 hours) will cost approximately $200. Additional testing with lower detection limits (more sensitive to the presence of PCBs) will cost approximately $125.

- An accredited laboratory is not necessarily qualified to test for PCBs in a used oil matrix. Most analytical laboratories that perform tests in the environmental arena dedicate their equipment for soil and/or water analysis. Because the used oil matrix is more complex, only laboratories whose equipment is programmed for

used oil can be considered reliable. In addition, lab technicians must be trained to distinguish PCBs from other chlorinated contaminants.

- Although expensive, the value of extensive testing for PCBs is obvious. While it is prohibitively expensive and operationally impractical to test every generator's used oil prior to every pick-up, testing of the used oil in the tank truck that has collected used oil from several customers, or testing used oil contained in a guard tank (i.e., prior to processing) is feasible. Such testing should be dramatically expanded throughout the used oil recycling industry and would be under NORA's proposal.

2.4.2 Isolation

- Testing alone will not address the problem of PCB-contaminated used oil. Such oil must be isolated to prevent any further contamination. Under NORA's proposal, the oil recycler's facility is not closed down and no employees are laid off. Instead, the business continues to operate, providing financial resources needed to pay for the disposal and decontamination costs.

- In addition, because retained samples from generators are required by NORA's Best Management Practices, the PCB generator can be positively identified. The PCB generator faces a less costly demand for reimbursement when the contamination is contained in the guard tank (compared to the contamination of the entire facility). When the incineration, decontamination, and lost product costs are in the millions of dollars, litigation is inevitable (assuming the generator can be identified and has financial resources). When such costs are more modest (e.g., under $100,000), it is much easier to reach a negotiated settlement.

2.4.3 Environmentally Sound Management

- For all practical purposes, TSCA regulations require incineration of PCB-contaminated used oil and prevent use of the oil for energy recovery in industrial furnaces or boilers if the original concentration of PCBs exceeds 500 ppm. Incineration has one purpose: the destruction of the material being incinerated. In contrast, burning for energy recovery has a constructive purpose. With energy recovery the BTU value of the used oil is put to good use – rather than destroyed

and otherwise wasted. Moreover, the value of an alternative virgin fuel is preserved.

- A viable alternative to burning for energy recovery is hydrotreatment which destroys the PCB molecules but preserves the petroleum for use as a feedstock in the production of re-refined lubricants. Hydrotreatment would be an effective and far more cost effective substitute for incineration of PCB-contaminated used oil but TSCA regulations include unnecessary barriers to widespread use of hydrotreatment.

- Over the past 25 years a number of oil recycling facilities have become Superfund sites. When an oil recycling company goes out of business and becomes a Superfund site the inevitable result is expensive litigation. The defendants include hundreds of used oil generators, many of them small businesses, who did not violate any EPA or state regulation. A Superfund cleanup project is also expensive with remediation costs often exceeding $20 million. If the potentially responsible parties ("PRPs") cannot pay for the entire amount of remediation, the taxpayers have to make up the difference.

- With respect to PCB contamination at an oil recycler's facility, more manageable disposal costs (under NORA's proposal) allows the oil recycler to stay in business and pay for proper disposal and decontamination expenses.

2.5 Regulatory Incentives Are Needed to Promote Industry-wide Adoption and Implementation of Best Management Practices8

- The PCB epidemic in the United States has not abated. The burden of addressing the PCB epidemic has been imposed on oil recyclers and a large part of the solution is the implementation of the Best Management Practices throughout the entire oil recycling industry.

- NORA members constitute a substantial portion of the oil recycling industry and some of these members are already implementing most of the Best Management Practices. However, there is a significant number of smaller used oil transporters and recyclers who are either not acquainted with the Best Management Practices or do not comprehend their value. Combined with NORA's effort to educate

NORA members as well as non-NORA members in the industry, EPA's adoption of NORA's proposal would create a major incentive for the entire oil recycling industry to fully implement this program. This incentive is necessary because (1) implementation of Best Management Practice is an ongoing, costly expense; and (2) the oil recycling industry has been devastated by the steep decline in the price of oil. If the goal of industry-wide implementation of Best Management Practices can be achieved, there will be far fewer PCB incidents and those that do occur will be far more limited in quantity.

- In light of all this information, it is clear that the oil recycling industry bears the brunt of a massive quantity of PCBs that continues to infiltrate used oil. Implementation of BMPs will help limit the quantity of used oil that becomes contaminated with PCBs. Adoption of NORA's proposal to adjust how TSCA's anti-dilution rule is applied will create a meaningful incentive for the entire used oil recycling industry to implement NORA's Best Management Practices.

3.0 Magnitude of the Problem

It has been estimated that more than 600,000 tons of PCBs were produced in the United States between 1929 when they were first manufactured and 1979 when they were banned from production. PCBs were often referred to as a "miracle" chemical because of their extraordinary insulating and fire-retardant properties. Extensively used as coolants and lubricants in transformers, capacitors, and other electrical and hydraulic equipment. PCBs were also used as ingredients in fluorescent light ballasts, inks, adhesives, and carbonless copy paper as well as plasticizers in paints and cements. Some other uses included stabilizing additives in flexible PVC coatings of electrical cables and electronic components, cutting oils, reactive flame retardants, lubricating oils, hydraulic oils, and sealants for caulking in buildings, adhesives, wood floor finishes, waterproofing compounds, casting agents, and vacuum pump fluids. PCBs were also used in x-ray machines, compressors, air conditioners, microwave ovens, voltage regulators, circuit breakers, electro magnets, and furnace blower motors.

It is fair to conclude that PCBs have been ubiquitous in the United States for many decades. The widespread assumption that PCBs would be "flushed out of the system" within a decade or so after the manufacturing of PCBs was prohibited has turned out to be wildly over-optimistic.

Because PCBs were extensively used in an oil medium (such as transformer oils) and because there is no obvious indicator (e.g., color or odor) that an oil contains PCBs, these oils have infiltrated the used oil recycling system for many years, and continue to do so. There are two basic reasons for this situation. First, many people who handle PCB oils are not aware that these oils contain PCBs. For example, in the demolition of an old commercial building the demolition contractor may dismantle an elevator and discard the elevator's hydraulic fluid as an ordinary used oil -- without any knowledge or concern that the oil may contain PCBs. Second, there is likely to be a set of people who are aware (1) that their oil contains PCBs; (2) that proper disposal is highly expensive; and (3) that disposing of it as if it were ordinary used oil is a feasible, although illegal, option. Regardless of whether the disposal of PCB-contaminated used oil was deliberate or unintentional, the practical effect is that PCBs are an ongoing and highly vexing problem of the entire used oil recycling system.

Moreover, in the context of an oil recycling facility that has become contaminated with PCBs, those problems are difficult to solve. Typically the facility's operations must be suspended while cleanup plans are developed and approved. This adversely affects the company's revenue as it can take months to develop and obtain EPA approval[3]. Tanks with contaminated product must be locked down after samples are taken and analyzed to determine the PCB concentration. Chain of custody records must be properly maintained. The generator of the PCBs should be identified. Evidence that the generator is in fact the source of the PCBs must be gathered and properly preserved. Qualified PCB cleanup contractors have to be selected and hired. Claims against insurance companies must be made on a timely basis. Adverse publicity must be addressed. Customer relations must be reinforced. There will be ongoing consultations with EPA as well as state and local agencies.

These are just a few of the tasks that precede the actual remediation phase which almost invariably involves incineration of the contaminated used oil and decontamination of the tank truck, tanks, and transfer equipment such as valves and hoses. The logistical problems associated with locating and contracting with a TSCA licensed incinerator and scheduling the transportation of the contaminated product to the incineration facility

[3]It has been NORA members' experience that some EPA regions are more able (or more willing) to approve remediation plans more rapidly than others.

should not be underestimated. See Attachment E (titled How to Handle an Awful & Horrible Used Oil/PCB Incident in Twenty Easy Steps).

In addition, if a lawsuit against the PCB generator is contemplated, CERCLA provides a worthwhile cause of action provided all of the applicable elements of the National Contingency Plan are satisfied. During the implementation of the remedy this involves full compliance with all applicable environmental, health and safety regulations. One problem with launching a CERCLA lawsuit is that there must be an actual release of a hazardous substance (in this context, PCBs) to the environment. However, a diligent effort to address the facility's PCB contamination issues will attempt to ensure that contaminated used oil is fully contained so that, ironically, there are no releases to the environment. Another major problem for the oil recycler confronting a major PCB contamination incident is the lack of funds necessary to prevail in lengthy litigation. Also, the absence of a release of PCBs to the environment is likely to preclude any coverage under environmental pollution insurance policies because such a release is a predicate to coverage.

The cost of a PCB-contamination "incident" will vary and depend on a number of factors such as the quantity of contaminated used oil and whether the contamination spread to the recycling facility's tanks and equipment – and possibly used oil fuel-burning customers. NORA's survey revealed that the cost of responding to a PCB incident ranged from a low of $39,000 to a high of $15 million.[4] The average cost for the survey respondents' largest PCB incident was $1.98 million.

Several of the oil recyclers who experienced these incidents described them as "absolutely devastating" or "my worst nightmare." One oil recycler had to sell most of his personal and real estate assets in order to pay for the costs of incineration and decontamination. His company was also greatly reduced in size and number of employees. Faced with a massive PCB incident several oil recyclers considered bankruptcy.

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[4]In 2009, Colonial Oil (a petroleum distributor not an oil recycler) was the victim of criminal fraud that resulted in PCB contamination of 3 million gallons of virgin oil. As a result of the application of the anti-dilution rule, the cost of cleanup was $21.3 million including $17 million for incineration of the 3 million gallons of petroleum.

The survey revealed that over the past 20 years, 17 companies experienced 132 PCB incidents. As indicated in the introduction, several companies (with known PCB incidents) declined to participate in the survey.

4.0 Current Disposal Options

An oil recycler confronting a PCB contamination incident currently has the following very limited options in the management of the contaminated used oil.

(1) Off-Specification Burners. If used oil has a concentration of less than 50 ppm of PCBs, it can be burned as off-specification fuel[5] for energy recovery, primarily in industrial furnaces and boilers as defined in 40 CFR 260.10. See 40 CFR 279.61 and 40 CFR 761.20(e). This assumes that the original generator's oil contained less than 50 ppm PCBs and that the generator could document that it had not diluted the oil.

Unfortunately, according to several processors interviewed for this report, in today's market there are very few customers who are willing to purchase off-specification fuel. This is due to the fact that on-specification Recycled Fuel Oil ("RFO") is available at extremely low prices. Competing fuels such as virgin oil and natural gas are also currently at record low prices. However, cement kilns, which have a voracious appetite for BTUs, and other industrial furnaces, may accept payment to burn off-specification used oil fuel.

(2) Industrial Furnaces and Boilers. This option is technically available for used oils with PCB concentrations of between 50 and 500 ppm when the original generator's oil contained less than 500 ppm PCBs. However, this option is rarely available as a practical matter because EPA usually requires incineration.

(3) Incineration. This option is intended for used oils with PCB concentrations greater than 500 ppm (as well as lower concentrations when the original generator's oil is either known or assumed to have had PCB concentrations of least 500 ppm). However, only a very few TSCA-licensed incinerators are available to handle these materials which results in extremely high transportation costs. The disposal fees charged by incinerators

[5]Under 40 CFR 279.11 used oil fuel with a PCB concentration of 2 ppm or greater but less than 50 ppm is classified as "off-specification" used oil fuel.

is also very high, as discussed in more detail in §5.0. The costs for incineration can cripple a processor financially. Based on the survey results, the average cost of remediating the largest PCB incident was nearly $2 million. Further, from an environmental perspective, it simply wastes oil that could be used otherwise for its intended purpose (for energy recovery or as a lubricant) and thereby reduce the need for virgin oil from foreign or domestic suppliers.

(4) Hydrotreatment of PCBs. This treatment method has been proven by Safety-Kleen Corp. to completely break down PCBs in used oils to undetectable levels [6]. This method was tested in Safety-Kleen's re-refinery that employed vacuum distillation in the presence of hydrogen gas and a solid metallic catalyst at elevated temperatures. Several NORA members (re-refiners) currently operate hydrotreatment facilities. NORA has presented EPA with a proposal that would standardize and expedite approval of hydrotreatment facilities to destroy PCBs in used oil and receive PCB-contaminated used oil from PCB incidents. See Attachment F (titled EPA Authorization of Used Oil Hydrotreatment Facilities and Other Alternative Technologies for Destruction of PCBs in Used Oil).

Hydrotreatment offers the distinct advantage of preserving the petroleum (in order to produce re-refined lubricants) while destroying the PCBs. This is clearly a more environmentally friendly approach to the PCB problem than incinerating contaminated oil to get rid of it and wasting the oil's substantial BTU content.

(5) Purposeful Dilution and Illegal Burning. Despite the fact that diluting PCB contaminated oils to levels below regulatory limits is unethical, illegal and violates NORA's Guiding Principles, it would not be difficult to do so and we should not ignore the likelihood that some bad actors may be using this tactic to avoid the cost of complying with the TSCA PCB regulations. Those who are willing to flaunt the law could also locate and take advantage of an unsuspecting burner. The PCB-contaminated used oil could be sold cheaply or even given away (perhaps to the owner of a space heater). While these practices should not be considered as viable options, they are highly tempting to those who cannot afford incineration or are unwilling to pay for it.

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[6]Brinkman, *et al*., *Full-Scale Hydrotreatment of Polychlorinated Biphenyls in the Presence of Used Lubricating Oils*, Environ. Sci. Technol. (1995), Vol. 29, pp. 87-91.

5.0 Costs

Under NORA's proposal, the cost of addressing a used oil/PCB incident would be significantly reduced in most cases -- but certainly not eliminated. Consider a hypothetical PCB incident in which NORA's proposal has been adopted by EPA and the oil recycler has implemented NORA's best management practices. In this hypothetical the PCB-contaminated used oil has been contained in a 30,000-gallon guard tank (at the oil recycler's facility) that contains 25,000 gallons of used oil. The original concentration of the PCBs (at the generator's facility) exceeded 500 ppm and the concentration of PCBs in the guard tank is less than 50 ppm.

Under NORA's proposal, the recycler will need to locate a qualified burner, such as a cement kiln or other industrial furnace, [7] that is willing and authorized to burn off-spec used oil with a PCB concentration less than 50 ppm. In today's energy market (and for the foreseeable future), the recycler cannot sell the 25,000 gallons of off-spec used oil to the cement kiln. The recycler will have to pay the cement kiln $0.50 per gallon (perhaps more). In addition, the recycler will have to pay for the transportation of the used oil to the cement kiln (as well as the return trip). Obviously, this cost will vary depending on the distance to the cement kiln and whether the used oil can be shipped by railcar or must be shipped by several tank trucks. The costs for transporting 25,000 gallons of PCB-contaminated used oil could easily range between $8,000 and $20,000.

In developing a useful hypothetical, I envisioned an oil recycler, which I named Central USA, Inc., whose oil recycling facility is located precisely in the geographical center of the continental United States. This happens to be two miles north of Lebanon, Kansas. The nearest cement kiln is operated by Monarch Cement Company (not a hypothetical) that is located in Humboldt, Kansas which is 296 miles from the Central USA facility. The nearest TSCA-licensed PCB incinerator is located in Deer Park, Texas and is operated by Clean Harbors Environmental Services. The Central USA facility is located 820 miles from Deer Park, Texas. [8] See Attachment G (titled Hypothetical Cost Comparison for Properly Managing PCB Contaminated Used Oil (Incineration vs. Cement Kiln Fuel).

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[7]Industrial furnaces are defined in 40 CFR 260.10 and include, *inter alia*, cement kilns, lime kilns, aggregate kilns, phosphate kilns, coke ovens, blast furnaces and foundry furnaces.

[8]Whenever there is a significant distance involved in transporting PCB contaminated used oil to a PCB incinerator there is also an increased risk of transportation accidents.

In the Central USA hypothetical, the recycler's payment to the cement kiln to burn 25,000 gallons of used oil (at $0.50 a gallon) containing less than 50 ppm of PCBs is $12,500; the transportation costs (five truckloads) would be $11,010. The cost of decontaminating the trucks cost would be $2,500. The cost of decontaminating the 30,000 gallon guard tank would be $3,000. The laboratory expenses would be approximately $500. Added together, these costs would be approximately $29,510. Although these are substantial costs, they are modest compared to the costs for incineration under applicable TSCA regulations.

Adapting the same hypothetical, the 25,000 gallons of used oil would (under current TSCA regulations) need to be incinerated in a TSCA-licensed incinerator at a minimum base price of $3.50 a gallon which equals $87,500. Usually there are also surcharges of $.60 per gallon based on BTU content and water content of the used oil. These would total $15,000. The transportation costs will be greater because the very few PCB incinerators in the United States are likely to be located at a greater distance from the oil recycler than the nearest available cement kiln. In the hypothetical, the nearest TSCA-licensed incinerator is located in Deer Park, Texas and the transportation costs and truck decontamination would be would be $30,125. Decontamination of the guard tank and analytical costs would be the same: $3,500. The total costs for incineration, decontamination and transportation to the incinerator would be $138,625.

Under current TSCA rules and EPA procedures, there would also be significant costs involved preparing formal remediation plans for EPA. Finally, EPA is likely to impose a substantial monetary penalty on the oil recycler – probably exceeding $50,000. In summary, the oil recycler's remediation costs under the current TSCA regulations are likely to be 3 to 5 times the costs under NORA's proposal. These remediation costs are in addition to the oil recycler's expenses to implement NORA's Best Management Practices. Under NORA's proposal these costs may be manageable; under EPA's current rules, especially in today's devastating energy market, the oil recycler's costs would be catastrophic.

6.0 Lack of EPA Enforcement Against PCB Generators

One disturbing finding of the survey of oil recyclers is that for the respondents who had experienced a PCB incident (and there were 132 such incidents) only one of the

generators responsible for the PCB contamination was the subject of an enforcement action by EPA. The typical scenario involves the following events:

- A used oil generator certifies to the transporter/recycler (on the profile and bill of lading) that its used oil contains no PCBs or hazardous waste.

- The generator's used oil passes a Clor-D-Tect test for total halogens.

- The PCB-contaminated used oil becomes mixed with other generators' loads on the collection route; when the tank truck is full the used oil is delivered to the used oil processing facility and unloaded.

- If the used oil is placed in a guard tank and the contents of the tanks is tested for the presence of PCBs, the contamination is limited to the contents of the guard tank as well as the tank truck and equipment.

- If the PCB-contaminated used oil is processed, the entire facility and a substantial quantity of used oil will also become contaminated.

- The recycler promptly notifies EPA of the PCB incident.

- After testing retained used oil samples the generator is identified as the source of the PCBs and EPA is notified and provided the evidence.

- The recycler is ordered by EPA to submit a cleanup plan and subsequently to conduct a cleanup.

- EPA issues a notice of violation to the recycler and subsequently imposes a heavy monetary penalty.

- EPA takes no enforcement action against the generator.

Surprisingly, although EPA has a robust enforcement program for TSCA violations involving PCBs, generators of PCB contaminated used oil picked up by used oil transporters have <u>not</u> been targeted by EPA. Instead, oil recyclers have been the target of numerous EPA enforcement actions. A thorough search of EPA TSCA enforcement

actions relating to used oil incidents reveals that only one used oil generator has been the subject of an enforcement action. In that case, the City of Tacoma, Washington, which operated a do-it-yourself ("DIY") used oil collection tank at the Tacoma landfill, was fined by EPA as a result of the collection by an oil recycler of 750 gallons of DIY-generated used oil that contained PCBs. The violations by the City of Tacoma (which occurred in May 2012) were: (1) failure to notify EPA of PCB waste handling activities; (2) failure to prepare a PCB hazardous waste manifest; and (3) distributing PCBs in commerce.

These TSCA violations would be applicable to any generator of used oil that contains PCBs and is collected by a used oil transporter. In addition, such generators would violate their obligation under RCRA to accurately characterize their waste materials. See 40 CFR 262.11. EPA's failure to initiate enforcement actions against generators of PCB-contaminated used oil is inexplicable. Moreover, it sends a contradictory message to the regulated community, specifically, generators who have the obligation to determine if their used oil contains PCBs avoid any accountability for their violations while transporters and recyclers who rely on generator certifications pay heavy fines and cleanup costs. The lack of enforcement against PCB/used oil generators precludes any deterrent effect and, in turn, undermines the incentive for generators to determine if their used oil contains PCBs.

7.0 The PCB Threat to DIY Used Oil Collection Centers

Each year the Do-It-Yourself ("DIY") used oil collection network channels millions of gallons of used oil to legitimate fuel processing and re-refining. This network consists of hundreds of public and private sector facilities that provide used oil collection tanks for the use and convenience of vehicle owners who change their own oil. However, the DIY oil change network is vulnerable to intentional or unintentional PCB disposal.

Congress, EPA, as well as state and local governments have long supported a robust system of DIY used oil collection. For example, Congressional enactment in 1986 of an exemption from Superfund liability for used oil generated by certain automotive oil generators that provide a DIY collection tank (available to the public) was intended to encourage much greater participation in the DIY used oil collection/recycling system. The key factor in the success of DIY used oil collection is the current widespread availability of DIY collection tanks. In other words, the convenience of a nearby DIY

collection center results in the proper management of DIY used oil. If DIY used collection were not available, an unknown number of DIY oil changers would turn to commercial "quick lubes" and would pay for that service. However, another alternative would be improper storage and disposal by DIY generators (often one milk jug at a time, containing used oil being sent to the local landfill or poured down the drain), resulting in contamination of land and water.

Significantly, all but three of the oil recyclers interviewed for the survey stated that they considered DIY oil collection centers to be "high risk" for PCB contamination. Two of the three were unsure. Several oil recyclers have reported PCB contamination incidents where the source of the PCBs was determined to be a DIY facility. This is a troubling finding because to the extent that the oil recycling industry refuses to collect DIY used oil, such oil may be improperly disposed of. This risk has been compounded by the recent dramatic drop in oil prices. When the price for a barrel of crude oil was over $50, used oil had value and generators were paid for their used oil. When the price of crude oil was $40 a barrel (or less) most oil recyclers were paid to collect the used oil. It is likely that this shift in the used oil market will have an adverse impact on DIY used oil collection because the used oil generator who maintains a DIY collection tank will have to pay for the used oil to be removed from that tank (instead of being paid for it).[9]

Hopefully, a rise in oil prices will at least allow used oil collectors to pick up DIY used oil without charge. While that would alleviate a part of the problem, it will not solve the potential for PCB contamination of DIY used oil. One partial solution [10] that some oil recyclers have used for DIY tanks and other high risk generators is the placement of two collection tanks or totes. When the first tank is full the used oil is tested for PCBs and the tank is locked down while the other is available to receive DIY used oil. If the test is negative for PCBs, the contents of the first tank can be collected. The process is repeated so that at least one tank is always available for DIY-generated used oil.

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[9]Another risk is that used oil generator will decide to burn its used oil in a space heater rather than pay a used oil collector for its removal. There is an obvious health hazard if there are PCBs in the used oil.

[10]Another partial solution is a greater effort to advise the public about PCBs with a view toward directing potentially PCB-contaminated used oil to household hazardous waste disposal opportunities provided by many local governments – rather than DIY used oil collection facilities.

8.0 Explanation of NORA's Best Management Practices

8.1 Best management practices are not required by current regulations but need to be widely implemented

The schematic diagram, titled Acme Oil Recycling, LLC–Hypothetical PCB Contamination Flow Diagram (Attachment H) illustrates how PCB problems have plagued, and continue to plague, law abiding used oil transporters, processors, and customers. The following text describes the diagram in detail.

Generators of used oils and oily water typically store their used oil products in tanks, drums, totes, and small containers. When the containers are ready to be emptied, a used oil transporter (often associated with the processing facility) will be called for the pickup. A tank truck (generally a vacuum truck) is dispatched to the site to collect the oil and/or oily waters. Because volumes at each generator are usually small (typically 150 gallons to 250 gallons), the truck will be collecting from as many generators each trip as the tank truck will hold. Thus, if one generator (in this case, Generator "C") has PCB-contaminated oil, it will mix with all of the other generators' used oil on that route.

To avoid the potential for collecting PCB-contaminated used oil, the generator is required to fill out a profile sheet describing the product and certify that no PCBs are contained in the oil (or alternatively that any PCBs have a concentration less than 50 ppm). This certification is usually based on the generator's knowledge about the source of the product being collected rather than an actual analysis. As an extra precaution, some transporters also collect and retain a small sample (two to four ounces) from each generator, or at the least, from each tank truck before it is offloaded at the processing plant. A Clor-D-Tect test of the sample, taken at the generator's facility, is used to test for the total halogen content, and if the Clor-D-Tect test indicates that total halogen content of the used oil exceeds 1,000 parts per million (ppm) the used oil will not be picked up .[11] The product is then transferred to the used oil processing plant where the truck tank is offloaded to a receiving/accumulation tank, along with the contents from other collection trucks. At this point, the processing facility is unaware that PCBs are present. The Clor-

[11]Pursuant to the "rebuttable presumption" provisions of 40 CFR Part 279 (the used oil management standards) used oil that contains 1,000 ppm or more of total halogens is presumed to have been mixed with hazardous waste. This presumption can be rebutted if the used oil generator can demonstrate that the source of the halogens was not a hazardous waste.

D-Tect test kits are not designed to detect PCBs, and are unable to detect PCBs at the level of regulatory concern. (See Attachment I). It is most common that the generator also is unaware of the presence of PCBs in his or her waste stream.

The oil is then processed by the used oil processing plant. It is first filtered; filtration is often accomplished during offloading of the product from the tank trucks. It is then allowed to phase separate so that water can be removed from the oil phase. This also can be done in the accumulation tank. The oil is then dehydrated using a heated vessel. Water and light-ends are collected by a distillation process. The resulting oil is transferred to finishing tanks where it can be blended with other oils of varying viscosity to achieve the customer's fuel specifications.

Prior to transporting the recycled fuel oil (RFO) to its fuel burning customers, the processing plant analyzes a sample and determines whether it is on-specification. [12] Based on 40 CFR 279.11, the standards for on-specification used oil is determined from analyses for lead, arsenic, cadmium and chromium as well as flashpoint and total halogens. The processor should also determine whether its RFO contains 2 ppm or more of PCBs. RFO with a PCB concentration on the range of 2 ppm to 49 ppm would be classified as off-specification used oil fuel unless the "original" concentration of PCBs exceeded 49 ppm.

If the oil recycler does not discover the presence of PCBs it may be the fuel-burning customer who makes the discovery. [13] At this point the processor is confronted with a number of unattractive options. The law abiding oil recycler will take back the RFO from its customer (along with a potentially large volume of commingled fuel) and attempt to identify the PCB generator [14] and the "original" concentration of the PCBs. If the original PCB concentration is above 49 ppm, the processor should notify EPA and submit a PCB waste handling form. EPA will proceed to investigate the situation and require the processor to conduct extensive testing for PCBs. EPA will also direct the processor to prepare a plan for remediation. Meanwhile, the entire plant will be shut down. Tanks

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[12]Currently, there is virtually no market in the United States for off-specification used oil fuel.

[13]Undoubtedly many incidents of used oil PCB contamination were never discovered.

[14]Ironically, it is the diligent oil recycler who retains samples from his or her oil generating customers. But if the retained sample leads to a determination that the original source of PCBs was above 49 ppm, it is the diligent oil recycler who pays the price by having to manage a major PCB contamination incident and pay penalties imposed by EPA.

will be locked down and the tank truck that picked up the contaminated load will be taken out of service. EPA's investigation will often lead to a TSCA enforcement action against the processor (but not the PCB generator).

The other unattractive options include not complying with TSCA regulations and attempting to conceal the PCB contamination by blending or shipping the PCB contaminated used oil fuel to an unsuspecting customer.

8.2 Implementing NORA's Best Management Practices

The attached diagram, titled Schematic Diagram of NORA's BMPs for Avoiding PCB-Contaminated Used Oil (≥50 ppm), (Attachment J) is intended to illustrate how these BMPs can greatly reduce the potential for PCB contamination of the processing plant and the recycled used oil. Implementation of the BMPs will result in significantly reduced environmental contamination as well as lower cleanup and decontamination expenses.

Again, the generators' used oil or oily water products are picked up by a transporter. However, the BMPs require that a sample of <u>each</u> generator's product is collected as well as the generator's profile. The profile certifies that the waste material contains no PCBs (or alternatively no PCBs with a concentration above 49 ppm). The certification also states that the assertion regarding PCB content is based on generator knowledge, and that no dilution of the sample was conducted to purposely reduce known PCB concentrations. The sample and certifications are archived at the plant. The archival system used by the processing plant includes a record keeping system that clearly identifies each generator, its certification, and the archived sample. The archived sample must be retained for a minimum of 45 days. This record keeping is intended to facilitate rapid tracking of the generator responsible for any "PCB hit."

The generator's archived samples do not need to be analyzed unless PCBs are detected at the plant from either tank truck samples collected prior to offloading (optional) or the guard tank samples (not optional). Analysis of the guard tank sample is by EPA Method 8082A. The guard tank and related samples are part of the processing plant's quality control system. The guard tank is used to protect the rest of the plant from becoming contaminated should PCBs be present. This limits the amount of used oil that may have to be disposed of. No used oil enters the process until the guard tank's contents

are tested and cleared for processing. The BMPs allow for a maximum guard-tank volume of 40,000 gallons, which ensures that contamination incidents remain relatively small while allowing rail cars to be used as guard tanks.

To provide additional assurance that the BMPs are faithfully implemented by all processing plant staff (including management), annual training of the staff is required. A designated official will certify that adequate training has been completed to assure that the BMPs are sufficiently understood by the staff. Training materials and the qualifications of the trainer(s) will be included in the training documentation. These records are maintained for three years.

With the implementation of the BMPs, the potential for the processing plant and the recycled used oil becoming contaminated is greatly reduced. Samples of the final processed oil are collected and analyzed for on-specification standards prior to delivery of the oil to the customer. The samples should also be analyzed for PCBs using EPA Method 8082A to provide documented assurance that the PCBs are not present at levels above the 2 ppm regulatory limit.

9.0 What Benefits Will Result From the Adoption of NORA's PCB Remediation Proposal?

NORA's fundamental objective is to prevent any PCBs from infiltrating the used oil recycling system. Although that is an ambitious -- perhaps unrealistic -- goal, substantial progress in preventing most PCB incidents and minimizing others can be achieved. Over the past four years NORA has been engaged in a comprehensive effort to understand the nature of the PCB contamination problem and develop strategies to address it. The key elements of this effort are: education, testing, isolation, and environmentally sound management.

9.1 Education

The traditional attitude of many used oil collectors has been: "I know my customers. They're clean. They don't handle PCBs." Then came the gradual realization that avoiding the so-called "high risk" used oil generators, such as scrap yards, is not a sufficient precaution. PCB-contaminated used oil can be generated by traveling

carnivals, airports, hospitals, military installations, educational institutions, farms, manufacturers, and veterinary clinics – to name just a few potential sources.

As part of its effort to educate its members, NORA has also emphasized that although generators have the obligation under RCRA to accurately characterize their waste materials (including used oil), very few used oil generators test their used oil for PCBs. Although they certify that their used oil contains no PCBs, many PCB generators are simply clueless (and careless) about the PCB content of their used oil. Others are aware, but find it convenient to hand off their PCB problem to an unsuspecting used oil collector. The risk of such a generator facing an enforcement action by EPA is virtually zero. Of the 132 incidents described in the NORA survey, only one PCB generator encountered an EPA enforcement action. See Attachment K.

Unfortunately, NORA members have also learned that, despite claims to the contrary, testing with Clor-D-Tect kits is not a reliable method for detecting PCBs in used oil. See Attachment I. The major lessons of NORA's educational effort is that (1) PCB-contaminated used oil can come from many different types of generators; and (2) there is no substitute for analytical laboratory testing for PCBs.

The other component of the educational effort is for used oil collectors to inform their used oil generating customers of the potential for PCBs to be in their used oil and persuade them to test all of their used oil that has the potential for containing PCBs. This effort will not be easy. NORA members have frequently reported that during PCB incidents the generators will steadfastly claim that they could not be the source of the PCBs – despite credible analytical evidence to the contrary.

9.2 Testing

Analytical laboratory testing for PCBs in oil is not cheap. A standard PCB test (EPA Method 8082A) by an accredited laboratory for one sample will cost approximately $85 or more. A "rush" test (i.e., results within 24 hours) will cost approximately $200. Additional testing with lower detection limits (more sensitive to the presence of PCBs) will cost approximately $125.

It should be mentioned that an accredited laboratory is not necessarily qualified to test for PCBs in a used oil matrix. Most analytical laboratories that perform tests in the

environmental arena dedicate their equipment for soil and/or water analysis. Because the used oil matrix is more complex, only laboratories whose equipment is programmed for used oil can be considered reliable. In addition, lab technicians must be trained to distinguish PCBs from other chlorinated contaminants. Analysis of used oil samples also can be a challenge because of potential interferences from the normal chemistry of used oil that often raise the detection limits. Finally, multiple laboratories can sample splits of the same oil sample and report significantly different concentrations. If one laboratory reports the contents to be 45 ppm and another laboratory report 55 ppm, is the oil TSCA regulated or 40 CFR 279 regulated? Which laboratory is correct?

Several of the larger oil recyclers in the United States operate "in-house" laboratories. One major advantage of an "in-house" laboratory is the speed of obtaining analytical results. The capital investment in "in-house" labs is significant. Moreover, trained and qualified laboratory technicians must be hired and retained. Although in-house laboratories constitute an important and major investment in guarding against PCB contamination incidents, they have not entirely eliminated such incidents. They generally are not certified by the regulatory agencies.

Although expensive, the value of extensive testing for PCBs is obvious. While it is prohibitively expensive and operationally impractical to test every generator's used oil prior to every pick-up, testing of the used oil in the tank truck that has collected used oil from several customers, or testing used oil contained in a guard tank (i.e., prior to processing) is feasible. Such testing should be dramatically expanded throughout the used oil recycling industry and would be under NORA's proposal.

9.3 Isolation

Testing alone will not address the problem of PCB-contaminated used oil. Such oil must be isolated to prevent any further contamination. In the hypothetical example of the Central USA oil recycler, the contamination was limited to the 25,000 gallons in the facility's guard tank. As indicated in §5.0, the cost of properly disposing of 25,000 gallons pursuant to NORA's proposal is substantial but manageable. Consequently, the oil recycler's facility is not closed down and no employees are laid off. Instead, the business continues to operate, providing financial resources needed to pay for the disposal and decontamination costs.

In addition, because retained samples from generators are required by NORA's Best Management Practices, the PCB generator can be positively identified. The PCB generator faces a less costly demand for reimbursement when the contamination is contained in the guard tank (compared to the contamination of the entire facility). When the incineration, decontamination, and lost-products costs are in the millions of dollars, litigation is inevitable (assuming the generator can be identified and has financial resources). When such costs are more modest (e.g., under $100,000), it is much easier to reach a negotiated settlement.

9.4 Environmentally Sound Management

9.4.1 Incineration versus Energy Recovery

For all practical purposes, TSCA regulations require incineration of PCB contaminated used oil and prevent use of the oil for energy recovery in industrial furnaces or boilers if the original concentration of PCBs exceeds 500 ppm. Incineration has one purpose: the destruction of the material being incinerated. In contrast, burning for energy recovery has a constructive purpose. In a steel mill or a cement kiln, burning for energy recovery constitutes an essential component of manufacturing useful products. Thus, the BTU value of the used oil is put to good use – rather than destroyed and otherwise wasted. Moreover, the value of an alternative virgin fuel is preserved. In addition, the limited capacity of PCB incinerators can be used for materials with much higher levels of PCB contamination.

9.4.2 PCB Destruction via Hydrotreatment

A viable alternative to burning for energy recovery is hydrotreatment (discussed in §4.0) which destroys the PCB molecules but preserves the petroleum for use as a feedstock in the production of re-refined lubricants. Although the economics of using hydrotreated PCB-contaminated used oil as a feedstock has not yet been established (i.e. whether the re-refiner is paid for receiving this material or accepts it without charge), hydrotreatment would be an effective and far more cost effective substitute for incineration.

9.4.3 Preventing Superfund Sites

Over the past 25 years a number of oil recycling facilities have become Superfund sites. These include:

- U.S. Oil Recovery site in Pasadena, Texas,
- ESI site in Indianapolis, Indiana
- Texas American Oil site in Midlothian, Texas
- Lenz Oil site in Lemont, Illinois
- P&W site in Nevassa, North Carolina
- Beede Waste Oil site in Plaistow, New Hampshire
- York Oil site in Moira, New York
- Voda Petroleum site in Clarksville City, Texas
- Ekotek site in Salt Lake City, Utah

When an oil recycling company goes out of business and becomes a Superfund site the inevitable result is expensive litigation. The defendants include hundreds of used oil generators, many of them small businesses, who did not violate any EPA or state regulation. A Superfund cleanup project is also expensive with remediation costs often exceeding $20 million. If the potentially responsible parties ("PRPs") cannot pay for the entire amount of remediation, the taxpayers have to make up the difference.

With respect to PCB contamination at an oil recycler's facility, more manageable disposal costs (under NORA's proposal) allows the oil recycler to stay in business and pay for proper disposal and pay for decontamination expenses. When the facility eventually terminates its operations, it can implement the appropriate closure procedures under 40 CFR Part 279 and other applicable environmental regulations.

10.0 Regulatory Incentives Are Needed to Promote Industry-wide Adoption and Implementation of Best Management Practices

The PCB epidemic in the United States has not abated. Because PCBs are ubiquitous and routinely invade the used oil recycling system, American society has effectively handed this massive problem to the oil recycling industry – without providing any resources to deal with this problem. Incidentally, it does not help the situation when

EPA fails to initiate enforcement actions against PCB generators but frequently fines oil recyclers who usually have to pay the full cost of very expensive incineration.

The burden of addressing the PCB epidemic has been imposed on oil recyclers and a large part of the solution is the implementation of the Best Management Practices throughout the entire oil recycling industry. NORA members constitute a substantial portion of the oil recycling industry and some of these members are already implementing most of the Best Management Practices [15]. However, there is a significant number of smaller used oil transporters and recyclers who are either not acquainted with the Best Management Practices or do not comprehend their value. Combined with NORA's effort to educate NORA members as well as non-NORA members in the industry, EPA's adoption of NORA's proposal would create a major incentive for the entire oil recycling industry to fully implement this program. This incentive is necessary because (1) implementation of Best Management Practice is an ongoing, costly expense; and (2) the oil recycling industry has been devastated by the steep decline in the price of oil. However, if the goal of industry-wide implementation of Best Management Practices can be achieved, there will be far fewer PCB incidents and those that do occur will be far more limited in quantity.

11.0 Conclusions

In summarizing the results of the survey of oil recyclers it is clear that the oil recycling industry has been hit hard by PCB contamination. For the companies that reported having had one or more PCB incidents, the total cost resulting from their largest incidents exceeded $33,000,000. This amount does not include the more numerous smaller PCB incidents. Overall, there were 132 PCB contamination incidents over the past 20 years at 17 of the 25 companies that were surveyed. The average cost of the largest PCB incident was approximately $2,000,000. Eight companies reported that they

[15]It appears that NORA's effort to educate its members on the need to implement Best Management Practices has been largely successful. Of the 25 companies surveyed all but one (a non-NORA member at the time of the survey) were knowledgeable about the BMPs and 22 out of the 25 companies are implementing at least some of the BMPs. However, the cost of implementation is substantial. According to the survey results, the average annual cost of implementing BMPs is $233,000. This is a major expense, particularly during an era when the energy sector of the economy (including the oil recycling industry) is in a severe depression.

encountered no PCB incidents. However, two of these companies stated that they did not test for PCBs.

In a vast majority of PCB incidents the PCB generator was identified. However, in only one case did EPA initiate an enforcement action against the PCB generator. In contrast, numerous enforcement actions have been initiated against oil recyclers for various TSCA violations. One major oil recycler reported that in his experience when the PCB generator has been identified, the generator is, invariably, in "total shock" and cannot believe that his facility is a source of PCBs. The lack of enforcement actions against PCB generators, combined with a very high level of PCB ignorance in the generator community, means that the flow of PCB-contaminated used oil will continue to be channeled into the oil recycling system.

While expanded testing and guard tanks will help contain the problem, they do nothing to eliminate the problem at its source. On this point, several oil recyclers reported a very similar story: the oil recycler learns that a generator has a "hot PCB load" and refuses to pick it up. Later inquiries reveal that the hot load has "disappeared."

The phenomenon of "disappearing" PCBs is not limited to PCB generators. Twenty of the companies in the survey stated that they were aware of other companies in the oil recycling industry (usually smaller, independent used oil transporters) that somehow rid themselves of hot loads. Eighteen companies stated that they were aware of used oil transporters that did not test for PCBs. On one level this is understandable because a small one or two truck oil transporter can bring his load to the processor who will test for PCBs. If it passes the PCB test the used oil is accepted. But if the used oil is contaminated with PCBs, what happens to the "hot load"?

One disturbing finding is that 23 of the companies considered DIY collection facilities to be "high risk" used oil generators, especially if they are unmanned. Those companies that collect DIY used oil usually engage in "pre-screening qualification" i.e. testing the used oil prior to collection. Such testing is expensive and whether it is borne by the DIY collection facility or the oil recycler, there is no financial gain in today's market for recycling DIY used oil. It remains to be seen whether oil recyclers and the public and private sector DIY oil collection facilities will altruistically continue to "do the right thing" or whether the DIY oil collection system will begin to slowly collapse.

In light of all this information, it is clear that the oil recycling industry bears the brunt of an unknown but probably massive quantity of PCBs that continues to infiltrate used oil. Implementation of BMPs will help limit the quantity of used oil that becomes contaminated with PCBs. Adoption of NORA's proposal to adjust how TSCA's anti-dilution rule is applied will create a meaningful incentive for the entire used oil recycling industry to implement NORA's Best Management Practices.

Attachments

A"achment┐ A

INTERVIEW QUESTIONS REGARDING PCB INCIDENTS

How much used oil do you collect in a year?

How much wastewater?

Have you ever had a used oil PCB "incident" -- specifically, an event that required either clean-up or where the used oil had to be incinerated?

How many such incidents in the past 20 years? How many in the past 5 years?

What were the costs of your largest incidents [clean-up costs, loss of valuable product, other costs]

How frequently do you find PCBs in incoming used oil [or wastewater] at concentrations above 2 ppm?

With respect to PCB incidents, was your company able to track down the source of the PCBs?

If so, did EPA pursue the generator of the PCBs for TSCA violations?
What was the original concentration of the PCBs?

Are you familiar with NORA's proposed Best Management Practices?

What Best Management Practices does your company implement, if any?
What would be your estimate of the annual cost to your company of implementing BMPs?

Are you aware (currently or in the past) of companies in the used oil collection/recycling industry that do not test for PCBs?

Are you aware (currently or in the past) of companies in the used oil collection/recycling industry that have ignored a PCB hit? (e.g. by diluting the PCB concentration and processing the used oil as if no PCBs had been discovered)?

Does your company avoid used oil generators that are considered "high risk"?

Do those high-risk generators includes DIY collection facilities?

A"achment┐ B

Results from Interviews of 25 Used Oil Companies Concerning PCB Contamination Incidents

firm	annual used oil volume (gals)	annual oily water volume (gals)	PCB events (last 20 yrs)	cost of largest PCB incident	original PCB conc. (ppm)	EPA action against genera -tor?	conduct routine PCB testing?*	imple- ment NORA BMPs?	Annual est'd cost of using BMPs	aware of any companies that ignore PCB hits?	aware of any companies that do not test for PCBs?**	avoid high risk generators?	consider DIYs high risk?
1	280,000	0	0	N/A	N/A	N/A	No	No	$0	Yes	Yes	Yes	Yes
2	90,000,000	5,000,000	1	$1.1M	37K	No	Yes	Yes	$350K	Yes	Yes	Yes	Yes
3	70,000,000	40,000,000	20	$2M	50-100K	?	Yes	Yes	$1.1-$1.5M	Yes	Yes	Yes	Yes
4	35,000,000	12,000,000	3	$42K	759K	No	Yes	Yes	$200K/site	Yes	Yes	Yes	Yes
5	45,000,000	4,000,000	0	N/A	N/A	N/A	Yes	Yes	$400K	Yes	Yes	Yes	Yes
6	25,000,000	10,000,000	5	$15M	50-700	No	Yes	Yes	$500K	Yes	Yes	extra care	Yes
7	5,000,000+	4,000,000	31	$10M	>300K	No	Yes	Yes	$120K	Yes	Yes	mostly	Yes
8	4,000,000	500,000	4	$100K	>250K	No	Yes	Yes	$30-$40K	Yes	Yes	extra care	Yes
9	47,000,000	3,000,000	13	$2.9M+	>10K	No	Yes	Yes	$435K	Unknown	No	extra care	Yes
10	5,000,000	0	2	$39K	200	No	No	Yes	$60-$100K	Unsure	Yes	extra care	Yes
11	3,500,000	100,000	2	~$100K	<1,000	No	Yes	Yes	$80K	No	No	extra care	Yes
12	2,000,000	1,000,000	2	$350K	>500	No	Yes	Yes	$100K	Yes	No	extra care	Yes
13	1,000,000	20,000,000	0	N/A	N/A	N/A	Yes	Yes	<$50K	Yes	Yes	extra care	Yes
14	20,000,000	200,000,000	10	$1M	25-14K	No	Yes	Yes	$250K	No	Yes	No	unsure
15	1,500,000	2,500,000	1	$50K	unknown	N/A	No	some	$50K+?	Yes	Yes	extra care	unsure
16	3,500,000	33,000	0	N/A	N/A	N/A	Yes	Yes	$3K	No	Yes	Yes	No

firm	annual used oil volume (gals)	annual oily water volume (gals)	PCB events (last 20 yrs)	cost of largest PCB incident	original PCB conc. (ppm)	EPA action against genera -tor?	conduct routine PCB testing?*	imple- ment NORA BMPs?	Annual est'd cost of using BMPs	aware of any companies that ignore PCB hits?	aware of any companies that do not test for PCBs?**	avoid high risk generators?	consider DIYs high risk?
17	103,000,000	325,000	0	N/A	N/A	N/A	Yes	Yes	$450K	Yes	Yes	Yes	Yes
18	800,000	12,000,000	1	$100K	>50	No	Yes	Yes	$60K-70K	Yes	Yes	Yes	Yes
19	180,000	3,000,000	0	N/A	N/A	N/A	Yes	Yes	$75K	Yes	probably	Yes	Yes
20	5,000,000	1,000,000	1	$40K	>50	No	No	some	$55K	No	Yes	extra care	Yes
21	7,000,000	1,500,000	2	$190	450K	No	Yes	Yes	$82K	Yes	Yes	extra care	Yes
22	15,000,000	6,000,000	24	$350K	275K	No	Yes	Yes	$175K	unsure	unsure	extra care	Yes
23	10,000,000	500,000	0	N/A	N/A	N/A	No	some	unsure	No	Yes	Yes	Yes
24	15,000,000	14,000,000	0	N/A	N/A	N/A	Yes	Yes	$75K	Yes	No	extra care	Yes
25	8,000,000	2,000,000	10	$180K	>200	No	Yes	Yes	$200K	Yes	unsure	Yes	Yes

*Laboratory analyses are conducted either by a certified outside laboratory or a company's in-house laboratory.
**"Company" means a used-oil transporter and/or processor.

Attachment C

□pril 2015

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A"achment┐ D

David G. Coles

M.S., R.G., L.G., LHG

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T□□□(i□□ Exp□r)is□

Environmental contamination investigations; evaluating and understanding the fate and transport of hazardous, toxic, and nuclear materials in groundwater, surface water, soil, and air; investigating a wide variety of contaminated sites; evaluating and interpreting site investigation data and data from subsequent remedial investigations; various preliminary assessment (PA), site investigation (SI), remedial investigation/feasibility study (RI/FS) experience (state and EPA). Extensive RCRA experience. Risk assessment experience (with formal training). Brown□elds experience. Solid waste (land□ll) experience, including closure. Used-oil facility experience (24 years; 10+ clients; 25+ sites). NEPA experience. Project management experience for both government funded and industrially funded projects. Proposal and complex report preparation experience. Regulator negotiation experience (EPA and various state agencies). Specialty experience in the fate and transport of metals/metalloids, organic contaminants (including petroleum products, pesticides, and solvents), wood preserving chemicals, and radioactive contamination. Additional experience with environmental compliance auditing and ISO 14000 standards; remediation and restoration oversight, and QA/QC support. Technical peer review and oversight for government agencies and industrial clients. Expert witness experience. Environmental compliance experience covering a number of permitting issues.

□r□d□□( )i□s

Registered Geologist in Oregon (#2009); Licensed Geologist and Hydrogeologist in Washington (#2264)
M.S., Chemistry - Oregon State University (1973), trace-element geochemistry thesis
B.S., Chemistry - Oregon State University (1970)
Additional studies in geology, California State University-Hayward (1974-1977), Portland State University (2002), environmental toxicology and risk assessment from the Oregon Graduate Institute (2002).

E□ploy□□( ) His)ory

5/94-Present, Coles Environmental Consulting, Inc., Principal Scientist, West Linn, OR.

7/93-5/94, Harding Lawson Associates, Principal Geochemist, Portland, OR of□ce.

2/92-7/93, Chester Environmental (formerly Keystone/NEA), Senior Scientist, Tigard, OR.

12/91-2/92, self-employed environmental consultant.

10/89-12/91, The Earth Technology Corporation, Portland, OR office; Office Manager and Program Manager for the Battelle EMO contract.

6/88-10/89, Beak Consultants Incorporated, Portland, OR; Director, Contaminant Assessment.

10/86-6/88, Battelle Pacific Northwest Laboratories (PNL), Richland, WA; Section Manager.

3/81-10/86, Battelle Pacific Northwest Laboratories (PNL), Richland, WA; Senior Research Scientist, Group Leader, and Project Manager.

10/72-3/81, Lawrence Livermore National Laboratory (LLNL), Livermore, CA; Staff Research Chemist and Project Manager.

Awards and Honors

Elected to Honor Society of Phi Kappa Phi, 1972.

Elected to Theta Delta Phi National Scholastic Men's Honorary Fraternity, 1967.

American Nuclear Society's Nuclear Fuel Cycle Division's Best Paper Award at the Annual Meeting, Las Vegas, NV, June, 1980.

Professional Highlights

As part of a joint atmospheric chemistry research project between LLNL and the Univ. of Maryland, collected and studied air samples at the South Pole, November- December, 1973.

Participated in a two week radiological survey of Bikini Atoll, Marshall Islands, summer, 1975.

Published an article in Science magazine entitled "Migration of Ruthenium-106 in a Nevada Test Site Aquifer: Discrepancy Between Field and Laboratory Results", D. G. Coles and L. D. Ramspott, Science, Vol. 214, pp. 1235-1237, March 5, 1982.

Convener of a GSA Penrose Conference on "Geochemistry of the Environment Near a High-Level Nuclear Waste Repository" held at Rippling River Resort, Welches, OR, September 9-14, 1984.

Completed a week-long short course in 2006 at the University of Alberta, Edmonton, titled *Introduction to Applied Environmental Geochemistry and Geochemical Modeling*, which emphasized the use of the sophisticated, state-of-the-art, thermodynamic-speciation modeling program PHREEQC developed and maintained by the USGS.

Publi□□io(s

뿱Mr. Coles has an extensive list of publications (23 open literature papers, 26 institutional papers, 9 abstracts and summaries of formal professional presentations not published elsewhere as full papers) covering primarily environmental topics and emphasizing geochemistry of contaminants in the environment. He has also authored hundreds of client reports prepared during his 28 years as an environmental consultant. These reports are well known for their thoroughness, clarity, depth of data interpretation, and sup - porting graphics.

A"achment┐ E

HOW TO HANDLE AN AWFUL & HORRIBLE USED OIL/PCB INCIDENT

in twenty easy steps

Christopher Harris
General Counsel
NORA, An Association of Responsible Recyclers

IMMEDIATE FIRST STEPS

- Stop the spread of the PCB virus. Lock down the tanks and tank trucks and railcars. Don't let tank trucks, pumps, valve, gauges or other equipment result in further PCB contamination of clean used oil.

- Track down the culprit generator and get samples from his used oil tank. Get samples from all other potential generators to eliminate them as potential sources.

- Get plenty of samples and test for aroclors. Use a certified laboratory. Lock down the samples and develop a chain of custody record for all samples.

- Retrieve any contaminated used oil that went to customers and arrange to have their tanks cleaned. Get samples of their tanks.

- Notify EPA (the EPA Region where the contaminated used oil is located) in writing. (e-mail is fine).

- Notify your ins urance company (i.e. file a formal claim). If there is a plausible basis for coverage under your policy but the insurance company denies your claim, you may have to sue.

- Call your environmental litigation lawyer.

- Make sure you have original of culprit g enerator's certification that the used oil for this pick-up contained no PCBs.

- Make sure you have the culprit generator's complete file.

- Take lots of photos.

NEXT

- Notify EPA of your PCB handling activity.

- Get congener analysis of the relevant samples. Aroclors are like blood types (e.g. O Positive). Congener analysis is like fingerprint analysis.

- If you need to clean your tank trucks, tanks or equipment follow EPA's TSCA rules and use a professional deco ntamination specialist (one who follows all the relevant rules such as HAZMAT, TSCA, OSHA , etc.) These are important in establishing compliance with the National Contingency Plan ("NCP").

- Prepare a flow chart summarizing the spread of the contaminated us ed oil. This information would include the locations of where the used oil is stored, the quantities and concentrations, and the date and time of any transfers.

- Document "releases" including drips and spills of the PCB-contaminated used oil.

AND THEN

- Contact the culprit generator and provide the relevant evidence. Ask if they have insurance. Expect that the culprit generator will immediately resort to "full denial" mode which is followed by "blame the transporter/processor" mode. Make sure that the information you provide to the culprit generator is the final version.

- Prepare a CERCLA Removal Plan; publish in local newspaper; request comments from the public.

- Keep track of all investigation and clean-up costs.

- Determine the value of your used oil inventory – prior to decontamination.

- Determine cost of diversion of resources and employees to address the PCB contamination incident.

BEFORE THE PCB HIT

Check your insurance policy to determine if there is coverage.

Deploy an effective tank guard system. Test for PCBs.

Retain samples from generators

(Follow NORA's Best Management Practices.)

Have a plan for responding to the PCB incident.

Designate key employees to manage the incident.

Select qualified clean up contractors.

Select qualified counsel.

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July 28, 2014

EPA AUTHORIZATION OF USED OIL HYDROTREATMENT FACILITES AND OTHER ALTERNATIVE TECHOLOGIES FOR DESTRUCTION OF PCBs IN USED OIL

Pursuant to 40 CFR 761.60(e) and 761.65(d)

The following list of components can be used by EPA to standardize and expedite the approval of alternative technologies to destroy PCBs in used oil , including used oil hydrotreatment facilities:

A. Owner/Operator Information

1. Identification of owner, operator and officials with direct operational management responsibilities.
2. Technical qualifications and experience of key employees.
3. Compliance history of owner/operator.
4. Notification of PCB activity to EPA.

B. Facility Location/Environmental Conditions

1. Location description / zoning.
2. Topography/flood plain.
3. Adjacent surface waters and/or wetlands.
4. Drinking water proximity.
5. Groundwater uses.
6. Discharges to waterways or sewers.
7. Surrounding land uses.

C. Facility Description

1. Description, location and condition of facility buildings and tanks.
2. Description of tank loading and unloading systems and procedures.
3. Description of facility drainage.

4. Storage areas secondary containment.

5. Analytical laboratory.

6. Parking area/traffic flow.

D. Hydrotreatment and other PCB Destruction Units: Performance and Procedures

1. PCB/used oil (and other materials) acceptance criteria; used oil collection procedures that include PCBs protocols.

2. Equipment description and design information; overview of PCB Destruction unit including a description of the typical ranges of operating conditions that would be used when feedstock containing TSCA-regulated levels of PCBs is being processed and, for a Hyrotreatment Destruction unit, the typical ranges of operating temperatures and pressures that would be used.

3. PCB sampling and testing procedures, including monitoring of all products and by-products; analytical methods; certified laboratory analysis of products and by-products. Information must be provided regarding the expected levels of PCBs that may remain in finished products. This would be supported by actual data from tests already performed, including trial runs, lab bench tests, pilot plant tests, and relevant data from other similarly-configured re-refineries.

4. Process flow diagrams for all feed (i.e., used oil, ethylene glycol, etc.) and production products and byproducts (i.e., asphalt flux/extender, base lube, ethylene glycol, fuel, etc.) Process flow diagrams include: (A) typical gross material balance showing how total input volume results in the full range of products and byproducts; and (B) information on the expected destination of PCBs initially in the used oil feed and a description of how components containing PCBs would typically be separated throughout

the process.

5. Equipment maintenance procedures/schedule.

6. Non-standard operating conditions, shutdown and emergency systems including information on startup mode, shutdown mode, and possible upset conditions of a hydrotreater or other processing unit, which will describe how the operator will behave under these non-standard conditions to ensure that PCBs do not end up in finished products at elevated levels.

7. PCB inventory tracking including information on testing plans describing how the operator will use statistical sampling methods to validate that the process remains in control and that the PCBs are being reduced/destroyed as expected.

8. Procedures for monitoring of feed tank(s) PCB concentrations.

9. PCB destruction performance standards (i.e. less than 2 parts per million) and evaluation including information regarding the expected levels of PCBs that may remain in finished products. This must be supported by actual data from tests already performed, including trial runs, lab bench tests, pilot plant tests, and relevant data from other similarly-configured re-refineries.

9. Procedures to be followed after the re-refinery has completed processing TSCA-regulated PCBs and is ready to return to processing normal used oil feed.

10. Record retention of operational records; feed rates, temperatures.

11. Cleaning of transport vehicles (tankers and rail cars).

E. Safety and Emergency Response Plans

1. Fire prevention and response plans; process safety, SPCC, FRP (if applicable).

2. Communication and alarm systems and procedures including release reporting.

3. Employee training.

F. PCB Facility Closure Plan

1. Maximum inventory of PCB containing materials and storage locations.

2. Description of closure activities including decontamination plan/verification procedures.

3. Closure checklist and schedule.

4. Closure plan modifications procedure.

G. Closure Cost Estimate – removal of PCB material

1. Calculation of costs of each closure activity including off-site disposal.

2. Inventory on hand.

3. Closure cost adjustments.

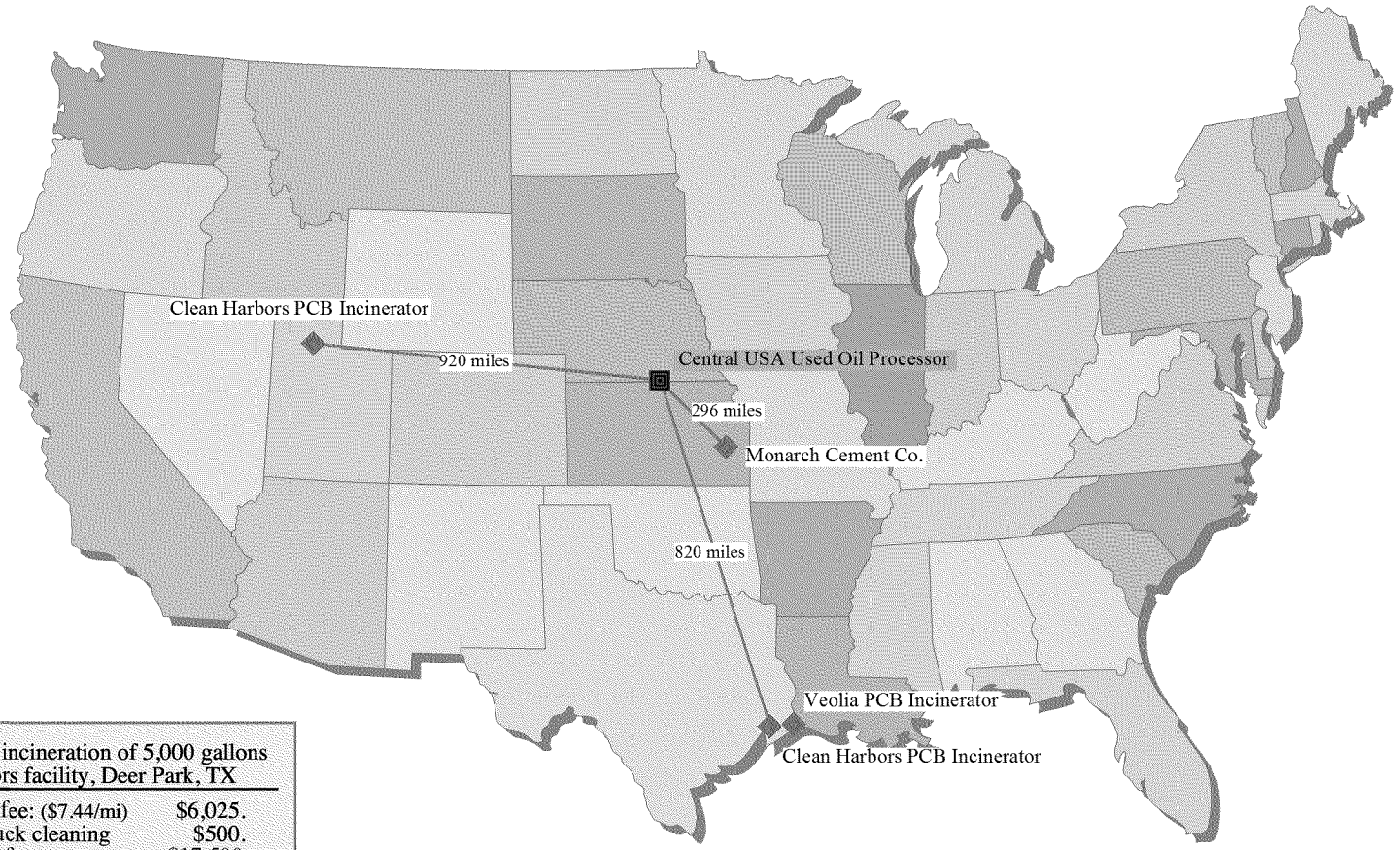
H. Demonstration of Financial Assurance

1. Financial Assurance instrument.

APPENDIX A - RESUMES
APPENDIX B - FACILITY DRAWINGS
APPENDIX C - SAFETY DATA SHEETS
APPENDIX D - PRODUCTION LAB SOPs
APPENDIX E - EXTERNAL CERTIFIED LABORATORY QA/QC
APPENDIX F - CLOSURE COST ESTIMATE
APPENDIX G - FINANCIAL ASSURANCE

A"achment┐ G

Hypothetical Cost Comparison for Properly Managing PCB Contaminated Used Oil
(Incineration vs Cement Kiln Fuel)



Estimated cost for **incineration of 5,000 gallons** at the Clean Harbors facility, Deer Park, TX

per load transp. fee: ($7.44/mi)	$6,025.
post-delivery truck cleaning	$500.
incinerator base fee ($3.50/gal.)	$17,500
surcharges* ($0.60/gal.)	$3,000.
Total:	**$27,025.**

*Based on various surcharges, including BTU content, water content, and solids content.

Estimated cost for using 5,000 gallons as fuel at the Monarch Cement Co. facility, Humboldt, KS

per load transp. fee: ($7.44/mi)	$2,202.
post-delivery truck cleaning	$500.
cement kiln fee ($0.50/gal.)	$2,500.
Total:	**$5,202.**

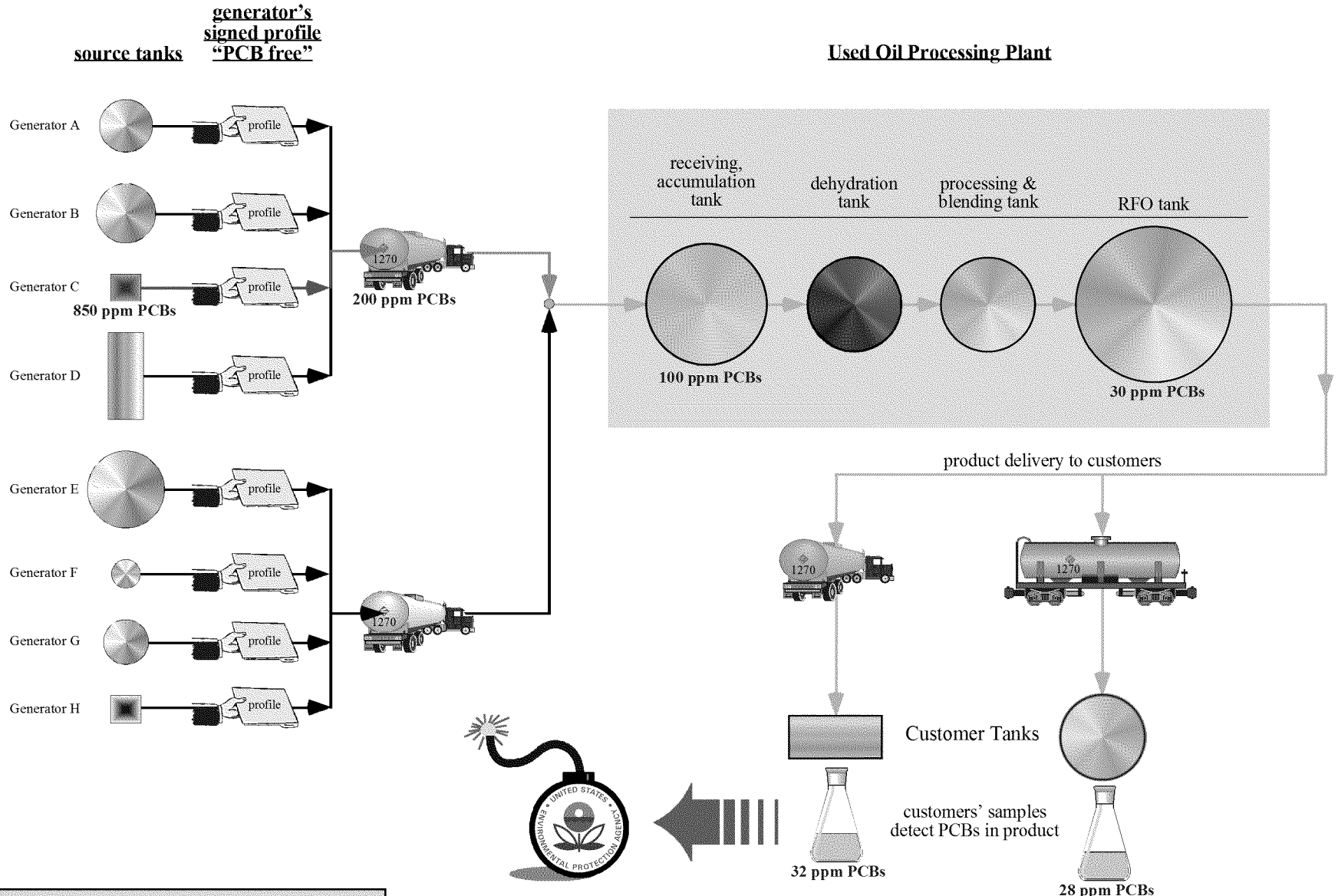
Note: Costs not included are laboratory fees and cleaning the processor's impacted tank. Regardless of the disposal method chosen, these costs are estimated to total $3,500 (see §5.0 of the report).

4 April 2016

Coles Environmental Consulting, Inc.
750 S. Rosemont Rd. West Linn, OR
(503) 636-3102, fax (503) 699-1980

Attachment H

Acme Oil Recycling, LLC
Hypothetical PCB Contamination Flow Diagram



Coles Environmental Consulting, Inc.
750 S. Rosemont Rd. West Linn, OR
(503) 636-3102, fax (503) 699-1980

5 April 2016

A"achment┐ I

DEXSIL®

September 18, 2015

Barnes Johnson, Director
Office of Resource Conservation and Recovery
USEPA Headquarters
Ariel Rios Building
1200 Pennsylvania Avenue, N. W.
Mail Code: 5301P
Washington, DC 20460

Dear Director Johnson:

I am writing to you in an attempt to correct a misunderstanding regarding the availability of a field test for the presence of PCBs in a used oil matrix. To the best of my knowledge, there is no available field test for specifically identifying PCBs contained in used oil. There have been many attempts over the past 40 years, but due to the inherent difficulties in the used oil matrix and the nature of PCBs, it has never been done. A common misconception, perhaps driven by wishful thinking, is that the Clor-D-Tect kits (manufactured by the Dexsil Corporation) differentiate PCBs from other sources of chlorine in used oil, however, these kits cannot make this determination. They quantify PCBs as they do all other chlorinated compounds, as total chlorine. The chemistry used in a Clor-D-Tect test is designed to quantify total halogen content – not PCB content. Only analytical laboratories are capable of distinguishing PCBs from other sources of chlorine in used oil.

The Clor-D-Tect kits (both Clor-D-Tect 1000 and Q4000, SW-846 Methods 9077 A and B respectively) were designed to provide a useful tool for compliance with the "rebuttable presumption" provision set forth in 40 CFR §279.44 by measuring total halogen content in used oil. In other words, the use of Clor-D-Tect kits by used oil collectors for testing used oil at the point of pick-up is intended for the single specific purpose of addressing the rebuttable presumption requirement and preventing the collection of used oil with a total halogen concentration of 1000 ppm or greater. *See* 40 CFR §279.11. Any Clor-D-Dect kit reading of, for example, 800 ppm of total halogens would not create any suspicion that the used oil contained PCBs.

Using a test kit, PCBs are quantified by their chlorine content. So, for example, used oil containing Aroclor 1242 would not trigger a positive on the Clor-D-Tect 1000 until more than 2300 parts per million (ppm) of PCBs were present. In addition, if measured with the Q4000, a 1000 ppm sample of Aroclor 1242 would only read 420 ppm. In both cases, there is no detection of PCBs, but only a total halogen determination.

DEXSIL CORPORATION • ONE HAMDEN PARK DRIVE • HAMDEN, CT 06517 • (203) 288-3509 • FAX: 203-248-6523 • www.dexsil.com

Another Dexsil product, Clor-N-Oil, has been improperly proposed as a method of detecting PCBs in used oil. When used properly on mineral oil dielectric fluid the Clor-N-Oil test kits (SW-846 Method 9079) provide an accurate and reliable determination of the maximum possible PCB content an oil sample can contain. Further testing on positive samples is required to verify that the contaminant is indeed PCB. Clor-N-Oil test kits should never be used on any type of oil other than transformer oil; this includes lube oil, hydraulic fluid, fuels and used or waste oil.[1] This information is on Dexsil's webpage and also in all literature.

Please let me know if you have any questions or need additional information.

Sincerely,

Theodore B. Lynn, Ph.D.
Director of Research

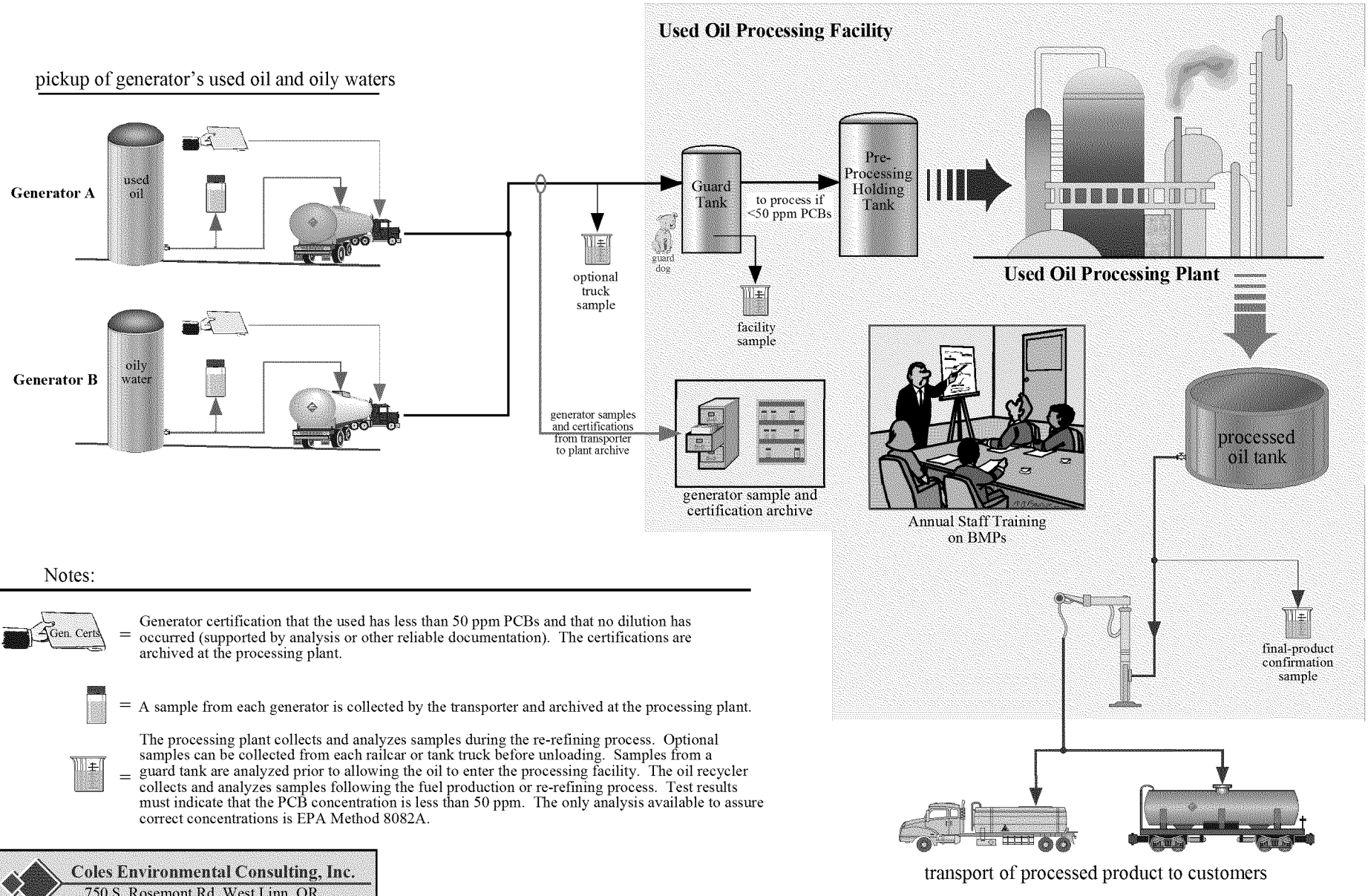
1 As presented in "Frequently Asked Questions" concerning Clor-N-Oil (Dexsil's product for detecting PCBs in transformer oil), Dexsil Corporation answered the following question:

Can Clor-N-Oil be used to determine PCB contamination in used motor/lubricating oils?

No. The Clor-N-Oil PCB field screening kits can only be used to test transformer oil (dialectric fluid). The kits do not work on used motor/lubricating oils because the test method does not specifically identify the presence of PCBs...."

A"achment┐ J

Schematic Diagram of NORA's BMPs for Avoiding PCB Contaminated Used Oil (≥ 50 ppm)



Notes:

Gen. Certs = Generator certification that the used has less than 50 ppm PCBs and that no dilution has occurred (supported by analysis or other reliable documentation). The certifications are archived at the processing plant.

= A sample from each generator is collected by the transporter and archived at the processing plant.

= The processing plant collects and analyzes samples during the re-refining process. Optional samples can be collected from each railcar or tank truck before unloading. Samples from a guard tank are analyzed prior to allowing the oil to enter the processing facility. The oil recycler collects and analyzes samples following the fuel production or re-refining process. Test results must indicate that the PCB concentration is less than 50 ppm. The only analysis available to assure correct concentrations is EPA Method 8082A.

Coles Environmental Consulting, Inc.
750 S. Rosemont Rd. West Linn, OR
(503) 636-3102, fax (503) 699-1980

17 March 2016

A"achment┐ K

BEFORE THE
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

In the Matter of:	)	DOCKET NO. TSCA 10-2013-0151
City of Tacoma,	)	
	)	**CONSENT AGREEMENT AND**
	)	**FINAL ORDER**
Tacoma, Washington,	)	
Respondent.	)	

I. AUTHORITIES

1.1 This Consent Agreement and Final Order ("CAFO") is issued pursuant to the authority vested in the Administrator of the U.S. Environmental Protection Agency ("EPA") by Section 16(a) of the Toxic Substances Control Act ("TSCA"), 15 U.S.C. § 2615(a).

1.2 The Administrator has delegated the authority to issue the Final Order contained in Part V of the CAFO to the Regional Administrator, who in turn has redelegated this authority to the Regional Judicial Officer.

U.S. Environmental Protection Agency
1200 Sixth Avenue, Suite 900
Seattle, Washington 98101
(206) 553-1037

1.3 In accordance with Section 22.18 of the "Consolidated Rules of Practice Governing the Administrative Assessment of Civil Penalties," 40 C.F.R. Part 22, Complainant hereby issues, and City of Tacoma ("Respondent") hereby agrees to the issuance of, the Final Order contained in Part V of this CAFO.

II. PRELIMINARY STATEMENT

2.1 In accordance with 40 C.F.R. §§ 22.13(b) and 22.45(b), issuance of this CAFO commences this proceeding, which will conclude when the Final Order contained in Part V of this CAFO becomes effective.

2.2 The Director of the Office of Compliance and Enforcement, EPA Region 10 ("Complainant") has been delegated the authority pursuant to Section 16(a) of TSCA to sign consent agreements between EPA and the party against whom a civil penalty is proposed to be assessed. 15 U.S.C. § 2615(a).

2.3 Part III of this CAFO contains a concise statement of the factual and legal basis for the alleged violations of TSCA, together with the specific provisions of TSCA and implementing regulations that Respondent is alleged to have violated.

2.4 Respondent has entered into this CAFO without admitting or denying liability for the alleged violations in order to resolve this matter without litigation and to avoid unnecessary disruption to its solid waste management operations.

III. ALLEGATIONS

3.1 Respondent is a first-class city under the laws of the state of Washington, and is a "person" as defined at 40 C.F.R. § 761.3.

3.2 At all times relevant to the alleged violations, Respondent owned and operated a landfill and recycling center located at 3510 South Mullen Street, Tacoma, Washington ("Tacoma Landfill Facility"). The Tacoma Landfill Facility is a "facility" as defined at 40 C.F.R. § 761.3.

3.3 Respondent reported that since the early 1990s, Respondent has collected used oil from the public at no charge.

3.4 On May 4, 2012, Emerald Services collected approximately 750 gallons of used oil from Respondent at the Tacoma Landfill Facility and transported the used oil to one of its recycling and processing facilities located at 1500 Airport Way South, Seattle, Washington ("Seattle Facility").

3.5 Prior to collection of the used oil from the Tacoma Landfill Facility on May 4, 2012, Emerald Services conducted a Chlor-D-Tect test to detect the presence of chlorine in the used oil; none was detected.

3.6 On or about May 9, 2012, Emerald Services completed an internal laboratory screening of storage tanks at the Seattle Facility that contained bulk collections of used oil from multiple sources, including the used oil collected from Respondent. The internal laboratory screening identified the presence of the Polychlorinated Biphenyl ("PCB") Arochlor 1242 in a storage tank at the Seattle Facility.

3.7 Emerald Services conducted additional screening of samples retained from individual collections of used oil and identified Respondent as the likely source of the PCBs. On or around May 11, 2012, Emerald Services collected samples from the used oil storage tank at

the Tacoma Landfill Facility. These samples contained the PCB Arochlor 1242 at concentrations greater than 50 parts per million ("ppm").

3.8 Pursuant to 40 C.F.R. § 761.60(a), PCB liquids at concentrations equal to or greater than 50 ppm are subject to the disposal regulations at 40 C.F.R. Part 761. The used oil collected from the Tacoma Landfill Facility on May 11, 2012, contained PCBs at a concentration above 50 ppm and therefore is subject to the disposal requirements at 40 C.F.R. Part 761, Subpart D.

3.9 A "generator of PCB waste" is defined at 40 C.F.R. § 761.3 as any person whose act or process produces PCBs regulated for disposal, whose act first causes PCBs to become regulated for disposal, or who has physical control over the PCBs when the decision is made to terminate the use of the PCBs. In the course of its waste disposal and recycling operations, Respondent managed used oil containing PCBs which was stored for collection by Emerald Services for recycling, reprocessing, or energy recovery of the used oil. Respondent is a generator of PCB waste in the situation alleged in this CAFO because it had physical control over the PCBs in the used oil that was offered to and collected by Emerald Services on May 4, 2012.

Alleged Violation 1

(Failure to Notify EPA of PCB Waste Handling Activities)

3.10 40 C.F.R. § 761.205(a)(2) requires a generator of PCB waste to notify EPA of PCB waste handling activities by filing EPA Form 7710-53.

3.11 Respondent is a generator of PCB waste that failed to notify EPA of waste handling activities by filing EPA Form 7710-53, in violation of 40 C.F.R. § 761.205(a)(2) and Section 15 of TSCA, 15 U.S.C. § 2614.

Alleged Violation 2

(Failure to Prepare a PCB Waste Manifest)

3.12 40 C.F.R. § 761.207(a) requires a generator of PCB waste who relinquishes control over PCB waste by transporting or offering the PCB waste for transport to prepare a PCB waste manifest.

3.13 Respondent is a generator of PCB waste and relinquished control of the PCB waste by offering the PCB waste to Emerald Services for transportation without preparing a PCB waste manifest, in violation of 40 C.F.R. § 761.207(a) and Section 15 of TSCA, 15 U.S.C. § 2614.

Alleged Violation 3

(Distribution of PCBs in Commerce)

3.14 40 C.F.R. § 761.20(c) prohibits any person from distributing PCBs in commerce within the United States unless the person complies with the applicable provisions of 40 C.F.R. Part 761, and the distribution is subject to an exemption or related to an excluded manufacturing process.

3.15 Respondent distributed PCBs to Emerald Services in the course of commerce without complying with the applicable provisions of 40 C.F.R. Part 761, without an exemption, and unrelated to an excluded manufacturing process, in violation of 40 C.F.R. § 761.20(c) and Section 15 of TSCA, 15 U.S.C. § 2614.

IV. CONSENT AGREEMENT

4.1 Respondent admits the jurisdictional allegations contained in Paragraphs 3.1, 3.2, 3.8, and 3.9 of this CAFO.

4.2 Respondent neither admits nor denies the specific factual allegations set forth in Part III of this CAFO.

4.3 As required by Section 16(a)(2)(B) of TSCA, 15 U.S.C. § 2615(a)(2)(B), EPA has taken into account the nature, circumstances, extent, and gravity of the violations, and Respondent's ability to pay, the effect of the penalty on Respondent's ability to continue to do business, any history of prior such violations, and Respondent's degree of culpability, as well as other relevant factors. After considering all of these factors, EPA has determined and Respondent agrees that an appropriate penalty to settle this action is $40,000.

4.4 Respondent agrees to pay the total civil penalty set forth in Paragraph 4.3 within 30 calendar days of the effective date of the Final Order.

4.5 Payment under this CAFO must be made by cashier's check or certified check payable to the order of "Treasurer, United States of America" and delivered to one of the following addresses based on the method of delivery:

By U.S. Postal Mail:	By UPS, Federal Express, or overnight mail:
U.S. Environmental Protection Agency Fines and Penalties Cincinnati Finance Center P.O. Box 979077 St. Louis, MO 63197-9000	U.S. Bank Government Lockbox 979077 U.S. EPA Fines and Penalties 1005 Convention Plaza St. Louis, MO 63101 314-418-1028

Respondent must note on the check Respondent's name and address, the case name, and the docket number of the case.

4.6 Respondent must deliver photocopies of the check described in Paragraph 4.5 via United States mail to the Regional Hearing Clerk and EPA Region 10 at the following addresses:

Regional Hearing Clerk U.S. Environmental Protection Agency Region 10, Mail Stop ORC-158 1200 Sixth Avenue, Suite 900 Seattle, WA 98101	Tristen Gardener U.S. Environmental Protection Agency Region 10, Mail Stop OCE-084 1200 Sixth Avenue, Suite 900 Seattle, WA 98101

4.7 If Respondent fails to pay the penalty assessed by this CAFO in full by the due date set forth in Paragraph 4.4, the entire unpaid balance of the penalty and accrued interest shall become immediately due and owing. Such failure may also subject Respondent to a civil action to collect the assessed penalty pursuant to Section 16(a)(4) of TSCA, 15 U.S.C. § 2615(a)(4), together with interest. In any such collection action, the validity, amount, and appropriateness of such penalty shall not be subject to review.

4.8 The penalty described in Paragraph 4.3, including any interest incurred under Paragraph 4.7, represents an administrative civil penalty assessed by EPA and shall not be deductible for purposes of federal taxes.

4.9 The undersigned representative of Respondent certified that he or she is authorized to enter into the terms and conditions of this CAFO and to bind Respondent to this document.

4.10 Each party shall bear its own fees and costs in bringing or defending this action.

4.11 Respondent expressly waives any right to contest the allegations contained in this CAFO and to appeal the Final Order set forth in Part V of this CAFO. Respondent expressly

waives the notice requirement and its opportunity to request a hearing on the order pursuant to Section 16(a)(2), 15 U.S.C. § 2615(a)(2).

4.12 Respondent's compliance with the terms of this CAFO shall fully and finally settle all civil claims and civil causes of action EPA could assert against the Respondent for the violations alleged in Part III.

4.13 Respondent's obligations under this CAFO shall terminate when Respondent has paid the civil penalty, and any applicable interest or late charges, as specified in Part IV of this CAFO.

4.14 The provisions of this CAFO shall bind Respondent and its officers, directors, agents, servants, employees, successors, and assigns.

4.15 The above provisions are STIPULATED AND AGREED upon by Respondent and EPA Region 10.

DATED: 8/28/2013

FOR RESPONDENT:

T.C. Broadnax
City Manager

DATED: 8-28-13

for Michael P. Slevin, III, P.E.
Director, Environmental Services Department

DATED: 8-28-2013

Andrew Cherullo
Finance Director

DATED:

8/28/13

Deborah Dahlstrom
Risk Manager

ATTEST FOR RESPONDENT:

DATED:

Doris Sorum 8-29-2013
Doris Sorum
City Clerk

APPROVED AS TO FORM FOR RESPONDENT:

DATED:

8-27-13

Doug Mosich
Deputy City Attorney

DATED:

9/13/2013

FOR COMPLAINANT:

EDWARD J. KOWALSKI, Director
Office of Compliance and Enforcement

V. FINAL ORDER

5.1 The terms of the foregoing Parts I-IV are hereby ratified and incorporated by reference into this Final Order. Respondent is ordered to comply with these terms of settlement.

5.2 This CAFO constitutes a complete and final settlement by EPA of all claims for civil penalties pursuant to TSCA for the violations alleged in Part III. In accordance with 40 C.F.R. § 22.31(a), nothing in this CAFO shall affect the right of EPA or the United States to pursue appropriate injunctive or other equitable relief or criminal sanctions for any violations of law. This CAFO does not waive, extinguish, or otherwise affect Respondent's obligations to comply with all applicable provisions of TSCA and regulations promulgated thereunder.

5.3 Respondent shall pay a civil penalty in the amount of $40,000, as provided in Part IV above.

5.4 This Final Order is effective upon filing.

SO ORDERED this 20th day of September, 2013.

M. SOCORRO RODRIGUEZ
Regional Judicial Officer
U.S. Environmental Protection Agency
Region 10

Certificate of Service

The undersigned certifies that the original of the attached **CONSENT AGREEMENT AND FINAL ORDER, In the Matter of: City of Tacoma Docket No.: TSCA-10-2013-0151** was filed with the Regional Hearing Clerk and served on the addressees in the following manner on the date specified below:

The undersigned certifies that a true and correct copy of the document was delivered to:

Kris Leefers
Office of Regional Counsel
U.S. Environmental Protection Agency
1200 Sixth Avenue, ORC-158
Suite 900
Seattle, Washington 98101

Further, the undersigned certifies that a true and correct copy of the aforementioned document was placed in the United States mail certified/return receipt to:

Mr. Gary Kato
Assistant Division Manager
Public Works Department, Solid Waste Division
City of Tacoma
3510 South Mullen Street
Tacoma, Washington 98409

DATED this 23rd day of Sept, 2013

Candace H. Smith

Signature

Candace H. Smith
Regional Hearing Clerk
EPA Region 10